

THE MEDICAL JOURNAL OF AUSTRALIA

VOL. I.—40TH YEAR

SYDNEY, SATURDAY, FEBRUARY 14, 1959

No. 7

Table of Contents

[The Whole of the Literary Matter in THE MEDICAL JOURNAL OF AUSTRALIA is Copyright.]

ORIGINAL ARTICLES—	Page	ABSTRACTS FROM MEDICAL LITERATURE—	Page
An Address—Oaths, Ethics and Action, by Keith Hallam	217	Dermatology	236
Virus Diseases of the Central Nervous System, by A. A. Ferris	220	Urology	236
Virus Diseases of the Central Nervous System, by J. J. Billings	221	Surgery	237
E.C.H.O. Viruses, by D. M. McLean	223	BRITISH MEDICAL ASSOCIATION—	
Steatorrhea in Childhood, by Charlotte M. Anderson	227	Victorian Branch: Annual Meeting	238
Ultrasonic Therapy, by Leigh T. Wedlick	230	DISEASES NOTIFIED IN EACH STATE AND TERRITORY OF AUSTRALIA	247
REVIEWS—		POST-GRADUATE WORK—	
Physical Dynamics of Character Structure	231	Clinical Meetings at St. Vincent's Hospital, Sydney	247
Textbook of Gynecology	231	THE ROYAL AUSTRALASIAN COLLEGE OF PHYSICIANS—	
Annual Epidemiological and Vital Statistics: 1955	231	Examination for Membership	248
The Pharmacologic Principles of Medical Practice	231	NOTICE—	
BOOKS RECEIVED	232	The Children's Medical Research Foundation of N.S.W.	248
LEADING ARTICLES—		NOMINATIONS AND ELECTIONS	248
Penicillin's Dark Shadow	233	DEATHS	248
CURRENT COMMENT—		DIARY FOR THE MONTH	248
John Wesley Among the Physicians	234	MEDICAL APPOINTMENTS: IMPORTANT NOTICE	248
Absorption of Orally Administered Vitamin B ₁₂ in Pernicious Anemia	234	EDITORIAL NOTICES	248
Deafness following Maternal Rubella	235		
Lipids of the Arterial Wall in Atherosclerosis	235		

An Address.¹

OATHS, ETHICS AND ACTION.

By KEITH HALLAM,

Retiring President of the Victorian Branch of the British Medical Association.

THE year 1958 is the centenary of the Medical Act of the United Kingdom. By this was constituted the General Council of Medical Education and Registration of the United Kingdom, which body soon became known as the General Medical Council. It is therefore fitting that I should talk to you about oaths, ethics and action, since much change has taken place in the practice of medicine since that Medical Act of the year 1858, causing modification of all these three to cope with evolution and progress. What I have to say to you is a pastiche from many sources. For some of my information I am indebted to two publications—Stephen L. Hadfield's "Law and Ethics for Doctors", the relevant parts of which should be read by every doctor in Australia, and a B.B.C. talk in the third programme printed in its weekly magazine *The Listener* for April 17, 1958; this is entitled "Father of Modern Political Science: E. Rosenthal on Ibn Khaldun".

¹Delivered at the annual meeting of the Victorian Branch of the British Medical Association on December 3, 1958.

Moving forward from 1858 I bring you memories of my own medical practice. This began in the nineteen-twenties, when it was a comparatively simple way of life, in which some of the main features were few investigational aids, few specific remedies, much heart-break and much appreciation. Economics were simple in general practice: the fee was standard, and had been for generations; bad debts were many; income tax was small. The capitation method of payment formed a large part of moneys collected. As a method of payment of doctors it was atrociously unfair, like putting a coin in a slot for unlimited service—a form of payment not practised in any other phase of life where one paid specific amounts for specific goods or services. Pensioners were few, and were frequently given free service. Doctors in the main practised singly. In rare cases partnerships of two were formed, or a principal might employ one or more assistants. Doctors fought friendly societies and, of course, one another.

In this era things are much more complicated. Doctors are paid in the main on a fee-for-service basis, and bad debts are comparatively few. Income tax may take half or more of what we earn. Incomes are high, but so are costs, and financial distribution is worrying and irksome. Security is the cry. Various government instrumentalities and other large organizations pay a big proportion of our fees. The Press, radio and television are taking more and more interest in medical matters. Political parties have made national health schemes and social security large planks in their platforms. The direct financial relations between doctor and patient on the fee-for-service

basis have in many ways been severed, and a sinister wedge of control thrusts its cutting edge more and more deeply into what was formerly a compact and friendly fusion.

These are some of the factors complicating the lives of doctors in this modern world, and we must from time to time revise our ethical code. We must also study political science, for our incursions into politics necessitate much diplomacy and organization and, most important of all, cohesion of effort.

A code of behaviour for doctors has been demanded from time immemorial, and about 2000 B.C. in Babylon a code of Hammurabi was in force. In the fifth and fourth centuries B.C., Hippocrates lived in Greece, and he crystallized the ethical principles of the times into an oath, the definition of oath in this sense being a solemn statement of a binding promise. Briefly, the Hippocratic oath implies that a doctor will share his knowledge and have no secret remedies, that he will not harmfully use his knowledge and will practise within the limitations of his competence, and that he will treat as confidential his knowledge of a patient and will not abuse the doctor-patient relationship.

In 1947 the World Medical Association redrafted the Hippocratic oath into a medical vow called the "Declaration of Geneva", which is perhaps not so generally known as it should be, and is quoted here:

I solemnly pledge myself to consecrate my life to the service of humanity.

I will give to my teachers the respect and gratitude which is their due.

I will practise my profession with conscience and dignity. The health of my patient will be my first consideration. I will respect the secrets which are confided in me.

I will maintain, by all the means in my power, the honour and the noble traditions of the medical profession.

My colleagues will be my brothers.

I will not permit considerations of religion, nationality, race, party politics or social standing to intervene between my duty and my patient.

I will maintain the utmost respect for human life, from the time of conception; even under threat, I will not use my medical knowledge contrary to the laws of humanity.

I make these promises solemnly, freely and upon my honour.

In 1949 this was amplified into the "International Code of Ethics", this being the declaration with more practical detail.

I ask you particularly to note the vow "My colleagues will be my brothers" and its implications, because this inspired me to tell you about the "Father of Political Science". There have been innumerable books written about this; but for pure basic principles on any subject one must always turn to the writings and life and times of the man who first promulgated the particular subject after compounding and consolidating his own experiences and other people's ideas.

Ibn Khaldun lived in the fourteenth century A.D. After an empirical training in intrigue and in prison, in administration and in warfare and finance, he returned to Cairo in 1389 to study, to writing and to teaching. His conclusions were that to translate the will to power into actual power, a strong man needs the support of like-minded men. This creates a sense of solidarity, mutual responsibility and united action, if the ties are mutual interests and a sense of brotherhood. This brotherhood was basically blood relationship, but afterwards was translated in wider spheres to a feeling of brotherhood. This change from blood relationship transcended tribalism and common descent, and replaced it by a common ambition to maintain and extend power and influence. The stability of political action depends on these ties, plus a common ideal. I have quoted here almost verbatim from Rosenthal's talk, and the tribalism in Ibn Khaldun's philosophy is obviously comparable with the extramural organisations of members of the British Medical Association, and the

common ambition is the unity of all sections, both extramural and intramural, of the Association's members. My point in welding this primary conception of political science to oaths and ethics is that in the medical profession our common ideals—that is the Hippocratic oath and the Declaration of Geneva and our ethical principles—and our necessary and pressing incursions into medical politics demand complete unity and brotherhood and solidarity, so that we may preserve to the utmost the highest ideals of service to the people under our care.

An enunciation of the attitude of the British Medical Association to politics is here quoted from an address given this year by Dr. H. C. Colville, the Chairman of the Federal Council of the B.M.A. in Australia, to a conference of executive officers of our Federal Council with the National Health Steering Committee of the Australian Labour Party. Dr. Colville said:

I would like to impress on you that the British Medical Association, which represents the vast majority of the doctors in Australia, is an entirely non-political body, and owes no allegiance to any political party. We have members who are supporters of the Liberal and Country parties, others who belong to the Labour party, and some who are staunch supporters of the Communist party; within our Association they are all on an equal footing. We cannot, of course, escape some contact with politics, but in that regard our attitude is quite simple: if any political party advocates a form of medical service which we think is good, then we support that party; if any political party advocates a form of medical service which we think is bad, then we oppose that party; and there our excursions into politics begin and end.

The second general observation I would like to make is that I assume that all of us round this table have one over-riding objective in common—that is, to see that the people of Australia get the best possible medical service. Allowing this to be the paramount consideration of us all, it would still be idle to deny that we would be less than human if we did not have a thought for our own interests in any scheme which might be advocated. You, as politicians, can hardly ignore the voice of popular opinion, and the likely appeal of any scheme which you may propose to the electors of the Commonwealth; we as doctors are equally anxious that any scheme put forward will be acceptable to the medical profession and therefore likely to be implemented by contented doctors—no scheme of medical service can possibly be satisfactory if it is worked by discontented and disgruntled medical men.

That statement deals with our attitude to broad politics; but to preserve our independence we have had to organize doctors against any attempt to whittle away our freedom, and this has meant, from the objective side, to be more compliant to the Press, radio and television, in relation to anonymity, which these fourth, fifth and sixth estates consider a futile anachronism. It was not without much thought and discussion that it was decided by the Federal Council and our Branch Council that anonymity should be discarded, due safeguards being mandatory in that all talks or articles should be given with the approval of the Council, or issued under a specific regulation. In urgent cases the Medical Secretary may refer a request to the President of the Branch for immediate decision. An information services subcommittee of the Council has been formed, because an ad-hoc committee on public relations had expressed concern at the failure of the B.M.A. to serve the public by not giving it information on medical matters to which it was entitled. Resultant haphazard dissemination of medical information and the lost opportunity for accumulating professional goodwill were also factors in influencing this committee. An organized profession would be able to cope with a sudden critical situation, while panic activities under such conditions would result in disaster. Improved relations with the Press were emphasized particularly after the scurrilous attacks on the profession in Victoria in 1956, which our legal advisers considered were libellous.

Another recommendation was that the B.M.A. should offer a regular series of magazine section articles by high authority in the profession, and that these should be published under the names of the writers. Broadcasting and television sessions should be catered for by appointing

a doctor or a panel of doctors to attend to them. The result of this determination to remove the anonymity ban is that applications to the Council, the Medical Secretary and the President have been approved in some cases and refused in others, in which an association with advertising of medical products has been desired by sponsors. The television series by a family doctor has been endorsed, and all his talks have been submitted to the Medical Secretary or the President for approval. His sessions have received much commendation and prestige to the profession has accrued. Likewise permission has been granted to other doctors, one for a panel discussion for Alcoholics Anonymous, and another for a panel talk to children, giving advice against taking unnecessary risks. Although anonymity is not preserved, there must be no reference to the doctors' addresses or to the nature of their practices. In other cases radio talks have been permitted, but anonymity has been insisted on, because in the interviews the doctors' specialties and treatment have been mentioned.

The Parent Association strictly adheres to an anonymity rule, which apparently is broken with impunity. We in Australia do not concern ourselves with broadcasting and television appearances by salaried doctors in government departments, or by doctors who have retired from active practice. However, in the United Kingdom these are frowned on. In such matters, what is right in the United Kingdom may not be best in Australia, where the profession has retained its freedom and may some day have to fight the battle that was lost in the Old Country. The Press, radio and television would be powerful weapons in any such battle, but we should be unable to use them if we persisted in anonymity. Doctors trained to handle them will be of great value if and when a struggle begins.

This liberalization of the rule of anonymity has and will have unfavourable repercussions; but I am convinced that we must not be ruled by fear of the effect of our mistakes, but must accept the fact that there are in the public an avid curiosity and a desire to be informed on medical matters in simple terms. This appetite is being pandered to by trashy and in many cases misleading statements, which we hope to suppress or counter.

To conform with the Council's policy of regularizing requests for information from the Press, a panel of experts was drawn up from members of Council, the Faculty of Medicine of the University of Melbourne, and the Melbourne Medical Post-Graduate Committee. This obviates the Medical Secretary and the President's being put in the embarrassing position in which they are unable to make a reasonable statement on a question of great importance to the public. The names on the panel are not known to the Press, but a request for comment can be diverted to the appropriate expert, who may be quoted without anonymity. Just how much this panel will be used remains to be seen.

This change in ethical principles is an experiment which, to be a success, should be viewed with unprejudiced but nevertheless highly critical eyes by all members of the Association. No disciplinary powers exist for control of doctors who do not belong to the Association, but who may appear on television programmes with a sponsorship not approved by the Council.

Ethical principles are divided into three main sections: the ethical obligations of doctors in general, of doctors to one another and of doctors towards the sick. Under the first section is a new ethical rule adopted in 1958, which is designed to conform to the ethical obligation in the International Code of Ethics: "A doctor in the pursuit of his profession must not allow himself to be influenced primarily by motives of profit." This new rule precludes a doctor from holding shares in a company which makes a stipulation of his holding of shares that he shall prescribe the products of that company. This pernicious restriction of prescribing for personal gain not only is morally wrong, but could have very grave political repercussions on the whole profession, as a restricted formulary is objected to by doctors because it limits their freedom to treat patients to the best of their ability. There is an

ethical rule in Victoria which states, in reference to notifications of commencement or resumption of practice and such like, that these notifications should appear a maximum of seven times in the Press in seven consecutive issues in a maximum of eight days. This rule is breached on occasions, possibly from ignorance. Ethical rules regarding good inter-doctor and patient-doctor relationships are stressed from time to time, but I will not weary you with specific instances.

It is impossible, however, to lay down ethical rules for every possible situation, and a rule promulgated at one period may not be applicable later on, because circumstances arise over which doctors have no control. An example is the recent rescission of the rule: "Books, monographs, pamphlets and literary articles on medical subjects shall not be advertised in the lay newspapers, reviews or journals." Publishers and booksellers now advertise textbooks on medical subjects in the lay Press, thus making the rule an absurd anachronism. Authors of medical textbooks would find it difficult to impose a total covenant on the publishers and booksellers in relation to their advertising media.

It is an axiom that when doctors receive remuneration for services to patients from a governmental or other such authority, and the patients get the services "free", abuses creep in, and in some cases flood in. This has been obvious since the Pensioner Medical Services began, and tribunals have been busy sorting out true and alleged abuses. The lot of the members of the tribunal is an unhappy one, since it is difficult to discriminate between the money-grubbing culprit and the genuinely kind and attentive doctor. No matter how distasteful is this policing of such a service, it is inevitable, and is a grave warning that it will be multiplied many times in any socialistic nationalized medical service.

The doctor has the need for freedom of decision, so that he may give his patients the best care and attention. He may be directed to carry out certain duties, but not how to do this. Recently a doctor told me that an insurance company had reduced the amount of his account for services to a patient, the reason given being that the clerk of the company said that in his opinion the anaesthetic administered was not the correct one for that particular procedure—so utterly irresponsible can lay control of doctors become. When this lay control is carried further, our self-imposed ethical obligations are translated into legal obligations.

Our defence against this constant threat of domination by lay people is for all members of our Association to be aware of the basic principles of political science, and to adhere strictly to our oaths and our ethical rules, so that we may conduct ourselves with dignity and honour, and that we may treat our colleagues and patients conscientiously and justly. Some simple and basic ethical rules exist more for the guidance of young men and women on their entrance into the profession, rather than as a set of punitive admonitions, although the punitive clauses are there to be exercised in extreme cases of breaches of the rules.

Some objects of the Victorian Branch of the B.M.A. are:

To maintain the honour and/or interests of the medical profession, to form a bond of union among the members of the profession, to promote fair and honourable practice, to decide upon questions of professional usage and courtesy, and to further the federation of the medical profession in Australasia.

The sum of the self-discipline, the loyalty and the conformity with a code of every individual in an organization is its total strength and prestige in the community. On the other hand, a breach of the ethical code by one individual can become a crack in the structure which may cause it to shake on its foundations, and only a few such cracks can make it topple. I tried to sum up in simple words the ideology of medical practice and found what I was groping for in the words of Charles Kingsley:

All pity, care and love,
All calm and courage, faith and hope.

VIRUS DISEASES OF THE CENTRAL NERVOUS SYSTEM¹

By A. A. FERREIS,

Epidemiological Research Unit, Fairfield Hospital,
Melbourne.

The purpose of this paper is to introduce virus diseases of the central nervous system from the viewpoint of the clinical microbiologist. It will be necessary in the first place to present some type of aetiological classification. From the comprehensive list thus formulated it is proposed to indicate and briefly discuss only those conditions which are encountered in everyday practice in Victoria.

Classification.

No really satisfactory classification of viral diseases of the central nervous system appears possible in the present state of our knowledge. Classifications based purely on morbid anatomy fall down, owing to the variability of lesions produced by the same aetiological agent and through lack of knowledge of the pathology in the many non-fatal illnesses. Aetiological classifications are, in the main, simpler and more satisfactory, but adequate proof of viral aetiology is lacking in many instances.

The following classification, based more upon aetiology than on morbid anatomy, probably errs on the side of simplicity, but may be of more use in clinical work. We can recognize four main groups: (i) encephalitis; (ii) paralytic poliomyelitis; (iii) infective polyn neuritis; (iv) aseptic meningitis or virus meningitis.

Two main criticisms are immediately apparent concerning poliomyelitis and infective polyn neuritis. Non-paralytic poliomyelitis has been relegated to the aseptic meningitis group because a clinical diagnosis of this condition, except in rare instances, is probably worse than useless, serving merely as a cloak for ignorance. Aetiology in the aseptic meningitis group will be discussed later. The paralytic disease may be diagnosed clinically with far greater accuracy than attaches to most clinical diagnoses, and thus provides a safer index of the prevalence of the disease in a community than do combined figures of paralytic and non-paralytic illnesses. Infective polyn neuritis is a condition whose viral aetiology is presumed rather than established, since the virus or viruses have not been isolated, and the dividing line between it and the post-infection encephalitis is by no means clear cut.

The Encephalitis Group.

The large encephalitis group may be aetologically subdivided as follows: (a) Primary arthropod-borne group, which includes Japanese B, St. Louis, Murray Valley (and West Nile) encephalitis viruses; Russian and louping ill viruses; equine group—western equine encephalitis, eastern equine encephalitis and Venezuelan viruses. (b) Rabies. (c) Encephalomyocarditis viruses. (d) Post-infection or secondary group, which includes measles and rubella viruses; varicella and variola viruses; herpes zoster and febrilis viruses; influenza virus; infective hepatitis virus; pertussis vaccine, etc.

The only true encephalitis seen in Australia, and it is uncommon, follows infection with the Murray Valley virus, which is probably identical with the Australian X disease virus. One case was diagnosed over the past twelve months in Fairfield. Encephalitis as seen clinically is almost always of the post-infection type, which may be an allergic phenomenon and not a true viral invasion of the central nervous system. Both these conditions will be elaborated further by Dr. Billings.

The encephalomyocarditis viruses are a newly discovered group, isolated originally from chimpanzees and rodents, but they may infect man. No evidence of their presence in Australia has been found, but it is interesting to note

that myocarditis was by no means an infrequent complication of fatal cases of poliomyelitis in 1951, but has been rare since. It seems probable that associated infection with Coxsackie B viruses rather than encephalomyocarditis viruses may have been to blame.

The Aseptic or Virus Meningitis Group.

The aseptic or virus meningitis group comprises patients presenting with headache, neck and back stiffness and a pleocytosis in the cerebro-spinal fluid. Subsequent development of paralysis is rare, and is limited to cranial nerve palsies. This syndrome may be caused by a variety of viral agents, of which the following are commonest: mumps virus, E.C.H.O. virus, poliomyelitis virus, Coxsackie virus, lymphocytic choriomeningitis virus, B virus and glandular fever virus. It should also be remembered that non-viral agents, especially *Leptospira* and *Treponema pallidum*, may produce the same syndrome.

It is obvious that determination of viral aetiology within this group is a matter for laboratory investigation, and it has been recommended that for purposes of public health statistics the terminology "aseptic meningitis, aetiology unknown" be employed when no investigations are made. When the aetiology has been established, appropriate terminology would be "aseptic meningitis, due to E.C.H.O. virus (or poliomyelitis virus, or mumps virus, etc.)". There is no doubt that in the past, and also to some extent at the present time, patients with the aseptic meningitis syndrome were simply labelled "non-paralytic poliomyelitis"—a diagnosis which was subject to considerable error.

The frequency of the different viruses in Victoria has, of course, fluctuated according to the prevailing epidemics, but four viruses certainly account for the majority of our cases—E.C.H.O. virus, mumps virus, poliomyelitis virus and Coxsackie virus.

It has frequently been stated that the lymphocytic choriomeningitis virus does not occur in Victoria. The statement was based upon good laboratory work, but the work was carried out some years ago. I know of no recent Victorian work which could confirm or refute it, but we have no positive evidence of the presence of this virus in Victoria.

Glandular fever is, in our experience, a rare cause of the aseptic meningitis syndrome. I know of only two cases, during the course of investigating many hundreds of patients over a number of years, in which the association was established. Both these patients gave positive results to Paul Bunnell tests. One patient had evidence of liver damage, as well as 25 cells per cubic millimetre of cerebro-spinal fluid and a cranial nerve palsy.

B virus infections, which follow the bite of an infected monkey, have not yet been recorded here.

Of non-viral causes of aseptic meningitis, *Leptospira* seems to be the agent to keep in mind, but in Fairfield Hospital we see only about two cases per year. Our patients infected with *L. pomona* are almost exclusively dairy farmers or meat workers.

The Common Viral Infections of the Central Nervous System.

Of all the infections we have classified, the following, in descending order of frequency, were commonest in this hospital over the past twelve months: (i) aseptic meningitis due to E.C.H.O. virus (type 4 predominant); (ii) aseptic meningitis due to mumps virus; (iii) post-infection encephalitis (especially following measles, varicella and rubella); (iv) infective polyn neuritis; (v) aseptic meningitis due to poliomyelitis virus; (vi) paralytic poliomyelitis.

It must be emphasized that frequencies fluctuate from year to year, and E.C.H.O. virus infections top the list because we had a big epidemic due to type 4 virus last summer. Further discussion of E.C.H.O. virus infections will be given by Dr. McLean. The most surprising feature is the occurrence of poliomyelitis at the bottom of the list. Only one poliomyelitis virus was isolated in our laboratory during 1957, and that was from a patient admitted to hospital in January. This contrasts sharply with 91 poliomyelitis virus isolations in 1956, and approximately that

¹ Read at a meeting of the Section of Neurology, Neuro-Surgery and Psychiatry, with the Section of Pathology, Bacteriology, Biochemistry and Forensic Medicine, Australasian Medical Congress (B.M.A.), Tenth Session, Hobart, March 1 to 7, 1958.

number yearly prior to 1956. Before attributing this virtual absence of poliomyelitis to the excellently organized and executed Salk vaccination programme in Victoria, we must realize that similar conditions apparently prevailed during the period 1939 to 1943. No particular study of poliomyelitis, and virtually no laboratory work, was carried out at that time, so it is perhaps untrue to state that the disease was absent from Victoria over these years. The Salk vaccination programme must be continued, especially in children under 14 years of age, but the real outcome may not be known for several years.

Changes in the Cerebro-Spinal Fluid.

There is no doubt that the first essential investigation in a suspected central nervous system infection is to perform a lumbar puncture. Examination of the cerebro-spinal fluid, besides excluding bacterial infections, will yield valuable information regarding virus infections. The absence of pleocytosis from a specimen collected early in the illness is quite a strong point against a viral infection being present, but there are two important exceptions. The classical picture in infective polyneuritis is a virtual absence of cells, with a considerable increase in the total protein level, although the greatest increase in protein occurs late in the illness. In some of the post-infection encephalitis, lumbar puncture may reveal an essentially normal fluid, but this is variable; it is more usual to find an increase in cells, even up to 300 per cubic millimetre, with some increase in protein. Although the number of cells tends to be lower in bulbar poliomyelitis than in the spinal form, there still is an increase in cells beyond five per cubic millimetre, and a normal cerebro-spinal fluid is strong evidence against the diagnosis of poliomyelitis.

In aseptic meningitis it is usual to find over 100 cells per cubic millimetre, and there may be more than 1000 cells. The type of cells varies, as in poliomyelitis, with the stage of illness—the earlier in the illness the greater will be the proportion of polymorphonuclear cells. In aseptic meningitis due to mumps the diagnosis may be suggested, even in the absence of parotitis or of mumps contact, by the high proportion of lymphocytes accompanied by a slight fall in the chloride level. An increase in the total protein content is usual, but in assessing this it should be realized that the protein content tends to increase with age—40 milligrammes per 100 millilitres would be the upper limit of normal for a child, but 60 milligrammes is within normal limits for an adult.

Attempted isolation of viruses from the cerebro-spinal fluid has not really proved useful except in E.C.H.O. and Coxsackie infections. In our recent E.C.H.O. type 4 epidemic we isolated the virus from approximately 25% of the specimens examined.

Isolation of Viruses.

The most satisfactory diagnostic measure in virus infections, as in bacteriology, is the isolation of the causal agent. Unfortunately, of the common virus infections of the nervous system, virus isolation in infective polyneuritis, in mumps and in the post-infection encephalitis is not a practicable procedure. However, in E.C.H.O. virus infections we obtain about 80% isolation of virus from stools, and in poliomyelitis about 80% isolation of virus from stools. It is worth examining the cerebro-spinal fluid if the patient is non-paralytic. These examinations are carried out in tissue culture. In true encephalitis due to a neurogenic virus, such as Murray Valley encephalitis, virus isolation is rarely accomplished except from the brain in fatal cases. In Coxsackie infections, isolation from stools may be accomplished in suckling mice, although Coxsackie A9 and B1-5 may be grown in tissue culture. Unfortunately, so few laboratories are equipped with an adequate supply of suckling mice, available when needed, that such examinations must often await availability of the suitable experimental animal.

Serological Methods of Diagnosis.

Some serological method, either complement fixation or serum neutralization, is practicable for all diseases in which the aetiological agent has been isolated. Such methods, whilst valuable in establishing the aetiology when virus isolation fails, have the usual drawbacks of serology.

First, diagnosis is always retrospective and can be made only when two specimens, an acute and a convalescent serum specimen, can be obtained. Secondly, antibodies may appear so early in the illness, and be so ubiquitous in the population, as in poliomyelitis, that even two serum specimens may fail to give a clear-cut answer. Thirdly, the number of possible causal viruses may be so great, as in the E.C.H.O. group, in which 20 serological types have been defined to date, that tests become too cumbersome to be practicable. Of course, in a current epidemic when the prevailing virus has been identified—conditions which existed when type 4 E.C.H.O. virus was epidemic in Melbourne—it is practicable to look for a rising antibody level to the epidemic strain.

Summary.

1. The important virus diseases of the nervous system are divided into four main groups—encephalitis, paralytic poliomyelitis, infective polyneuritis and aseptic (or virus) meningitis.
2. As far as possible each group is then subdivided on an aetiological basis.
3. Aseptic meningitis due to E.C.H.O. virus, aseptic meningitis due to mumps virus, post-infection encephalitis, infective polyneuritis and poliomyelitis comprise the viral infections most commonly encountered at Fairfield Hospital over the past twelve months.
4. Changes in the cerebro-spinal fluid, isolation of viruses and serological tests for the common viral infections are discussed briefly.

VIRUS DISEASES OF THE CENTRAL NERVOUS SYSTEM.

By J. J. BILLINGS,
Melbourne.

THE original classification of virus diseases of the central nervous system by Greenfield (1938) has proved most satisfactory. This is as follows: (i) polioencephalitis; (ii) panencephalitis; (iii) post-infectious encephalomyelitis; (iv) acute haemorrhagic leuco-encephalitis (Hirst); (v) meningo-encephalitis.

Within the first group, involving predominantly the grey matter, there are to be included: (a) encephalitis lethargica (von Economo); (b) rabies; (c) poliomyelitis. Encephalitis lethargica itself has never, of course, been proved to be due to a virus infection, and the histological phenomena, particularly the perivascular cuffing with inflammatory cells, are not specific for infective processes. However, the occurrence of the disease in epidemic form is strong evidence in favour of an infection. Poliomyelitis produces observable lesions within the brain, but the clinical manifestations of the disease depend particularly upon the damage produced to anterior horn cells. It may safely be said that poliomyelitis produces only two clinical pictures, one of aseptic meningitis and the other of a lower motor neuron paralysis. In both encephalitis lethargica and poliomyelitis, sequelae of the infection may appear a considerable time after apparent recovery. This is better recognized in the case of encephalitis lethargica, particularly in the development of parkinsonism, but in both conditions muscular atrophy may appear. This was often attributed to the persistence of the virus or presumed virus in the tissues of the central nervous system, but it seems likely that nerve cells can be damaged in such a way, and by various agents including physical trauma, that although they are not immediately destroyed their normal span of life is greatly reduced.

Recently, Sutherland (1956) analysed 1718 cases of poliomyelitis to study the association, if any, between physical activity and the severity of the illness. He found that as

¹Read at a meeting of the Section of Neurology, Neurosurgery and Psychiatry, with the Section of Pathology, Bacteriology, Biochemistry and Forensic Medicine, Australasian Medical Congress (B.M.A.), Tenth Session, Hobart, March 1 to 7, 1958.

the age of the patient infected with poliomyelitis increases there is a trend towards (i) increasing severity of the illness, (ii) greater physical activity before the onset of symptoms, (iii) less rest after the onset of symptoms. When patients in a particular age group were studied it was found that physical activity had no influence on the subsequent development of paralysis, a finding which contradicted the views propounded earlier by Ritchie Russell (1947).

The second group of panencephalitis, so called because lesions occur in both the grey and the white matter, contains the following important entities: (a) arthropod-borne encephalitis (arbor viruses); (b) herpes simplex encephalitis; (c) subacute inclusion body encephalitis (Dawson), also called subacute sclerosing encephalitis (van Bogaert). It must be pointed out again that Dawson and van Bogaert's type still lacks proof of an infective cause.

From our point of view, one of the most important virus infections of the nervous system is that due to the arbor viruses. The distinguishing property of these viruses is that in nature they multiply in the bodies of arthropods, without occasioning detectable damage to their tissues. Transmission of the viruses to man or to other hosts, mammals or birds, takes place through an arthropod bite. The carrier in turn becomes infected by ingestion of blood from a host at a time when a virus is present in the latter's peripheral circulation. Recently, Casals (1957) classified 47 distinct arbor viruses, not all of which ordinarily involve the nervous system. St. Louis, Japanese B and Murray Valley encephalitis fall into a group which also includes dengue and yellow fever.

Of the outbreaks of severe human encephalitis which have been recorded in Australia, five have been probably of the one type. These epidemics occurred in 1917, 1918, 1922 and 1925, when the disease was referred to as Australian X disease. A further epidemic occurred in 1951, when the disease was designated Murray Valley encephalitis. A virus was isolated in 1917, 1918 and 1925, but was not retained for later comparison, which would have been possible when a virus became isolated in 1951. There are many similarities between Australian X disease and Murray Valley encephalitis, which justifies the conclusion that they are the same disease; for example, the clinical picture is similar: there is high mortality in both instances; the histological appearances are similar; there is a pronounced tendency to affect children, and males are affected more commonly than females; the seasonal incidence is similar and the diseases have broadly the same geographical distribution. Furthermore, so far as the viruses were tested previously, the range of suitable animals appeared to be the same.

In 1919 there were some cases of encephalitis, probably other than Australian X disease as well, and there was a case of encephalitis reported by Horan (1944) from the Northern Territory in 1942, which was also not Murray Valley encephalitis.

So far as the outbreak of Murray Valley encephalitis is concerned, the vast majority of the cases occurred west of the Great Dividing Range, which is continuous with the mountains of northern Queensland, from which it runs south, more or less parallel to the coastline, until it reaches the alps of eastern Victoria, and then turns west. This incidence is in spite of the fact that the vast majority of the population lives on the other side of the Great Dividing Range, that is the coastal belt. Extraordinarily fine field and laboratory research in this disease was performed by Gray Anderson (1952, 1954), by French (1952), by Miles and Howes (1953), and by Ludford and Cook (1957). Their studies indicated that the infection is endemic in the Northern Territory and in the north of Queensland as well as in New Guinea, the main reservoir being water birds, and the predominant vector a culicine mosquito associated with large areas of natural water. Excessively heavy rainfall during the late months of the year in the catchment area of the Darling River and its tributaries set the stage for an outbreak of encephalitis by promoting unusual southerly migration of the host birds and increased mosquito breeding.

An excellent description of the clinical features of Murray Valley encephalitis was given by Greame Robertson and McLorinan (1952), and they are similar to those of the other varieties of arthropod-borne encephalitis. The onset is usually abrupt, with general symptoms, malaise, fever and headache, followed by irritability, lethargy, drowsiness and vomiting. Convulsions were particularly prone to occur in children. As the disease progressed, clinical evidence of widespread involvement of the nervous system appeared, with the development of involuntary movement of all types, cerebellar deficiency, upper and lower motor neuron paralyses, deep unconsciousness and respiratory irregularities. Mild and severe cases occurred, and altogether eight of the 22 patients died. Of the more severely affected patients, some had considerable residual disabilities after recovery from the acute phase. The association of fever, neck and spine stiffness, impairment of consciousness and raised cell count in the cerebro-spinal fluid is very important. The diagnosis of encephalitis is always difficult and, it may be added, always dangerous. A misdiagnosis of encephalitis may be made in head injury, cerebral tumour, any severe infection, severe haemorrhage, metabolic disorders such as liver failure, and so on.

Post-infectious encephalomyelitis and acute haemorrhagic leuco-encephalitis can be considered together, as it now seems probable that the severe haemorrhagic disorder is a very severe variety of the other type. Post-infectious encephalomyelitis was essentially a demyelinating disorder, an acute perivascular myelinoclasia. It occurs after the following infections: smallpox, chickenpox, measles, mumps, German measles, whooping cough, glandular fever, influenza, oozys, etc.; also as a complication of vaccination against smallpox and certain other immunising procedures. The time of onset of the encephalitic or myelitic symptoms is fairly constant for each disease. Most commonly there are symptoms of diffuse cerebral involvement of brief duration, sometimes convulsions and stupor, and generally, in the severe cases, signs of a pyramidal tract disorder. The cell count in the cerebro-spinal fluid generally varies from about 20 to 200 cells per cubic millilitre. There is a profound tendency towards complete recovery. Bilateral optic neuritis may be encountered, and may be followed by optic atrophy.

Recent experimental work on the production of an allergic encephalomyelitis by repeated injections of myelin obtained from an animal of the same species has suggested a possible explanation for the group of post-infectious encephalitides. The first examples of this phenomenon were provided by the neuro-paralytic accidents of antirabic treatment, and it was, of course, the danger of producing a similar condition that delayed the development of a successful immunisation against poliomyelitis until the virus was able to be grown in tissue culture. The earliest experiments of Rivers and Schwentker (1935) have been amply confirmed by Ferraro and Jervis (1940), Morgan (1947), Kabat *et alii* (1947) and others, and recently Dorothy Russell (1956) has referred to a plasmocytosis of the spleen in these conditions, which she regards as indicative of an allergic state. It is thought that a chemical substance in the myelin acts antigenically in certain individuals, and that a specific antigen-antibody union occurs on the surface of the cell membranes of their oligodendrocytes. The infection in some way triggers off their interaction, with resulting damage to the cells which are responsible for the nutrition of the myelin. According to this theory, the reaction is an example of the Arthus phenomenon, which is well known to pathologists. This explanation means that actual infection of the central nervous system by the virus need not occur at all.

More recently the allergic theory has been extended to include acute febrile polyneuritis, including those cases in which the Guillain-Barré phenomenon is found in the cerebro-spinal fluid, and also some cases of Schilder's disease, and what is most interesting of all disseminated sclerosis itself. In disseminated sclerosis it is assumed that subsequent episodes occur because of the lack of specificity of the triggering mechanisms, in contrast, say, to measles, of which as a rule only one attack occurs in a lifetime.

Some special mention must be made of mumps, which can produce a great variety of neurological disorders, and not only the perivascular demyelination referred to. Cranial nerve palsies, polyneuritis, meningo-encephalitis and involvement of the eighth nerve occur. The eighth nerve involvement is particularly important, because it may produce partial or complete deafness. The onset is rapid and often associated with tinnitus, vertigo and vomiting. Fortunately, the condition is usually unilateral. In the absence of parotitis, the diagnosis is difficult, unless the actual exposure is known or the virus is identified or a positive result to a complement fixation test is obtained. In a few cases, the development of orchitis has suggested the correct diagnosis.

Finally, we have to consider the subject of virus meningo-encephalitis. The syndrome is often referred to as benign lymphocytic meningitis or aseptic meningitis. Poliomyelitis, mumps and E.C.H.O. viruses have been the commonest causes, but there are many other aetiological agents including some Coxsackie viruses, measles, chickenpox, glandular fever, leptospirosis, etc. These infections are not necessarily benign, because they may cause a severe encephalitis, or there may be severe lesions in other organs including the heart. Perry, of the Royal Children's Hospital, Melbourne, isolated a Coxsackie B virus from the heart muscle in a fatal case of myocarditis, and found a rising titre of antibody to Coxsackie B in a non-fatal case of myocarditis. Stanley (1952) reported an outbreak of encephalitis associated with a group of Coxsackie viruses. Recently, Blattner (1956) has drawn attention to experimental evidence suggesting that severe myocarditis may be precipitated in Coxsackie infections by the administration of corticosteroids.

In 1956 an epidemic of E.C.H.O. virus meningo-encephalitis occurred in Melbourne. A very good account of this epidemic has been given by Forbes (1958). In the four years preceding July, 1956, the number of patients with meningo-encephalitis, without paralysis, admitted to the Infectious Diseases Hospital, Fairfield, Victoria, fluctuated in proportion to patients suffering from paralytic poliomyelitis. In August, 1956, the numbers of paralytic poliomyelitis cases had fallen, whereas cases of meningo-encephalitis without paralysis were increasing. In the succeeding eight months, only nine patients with paralytic poliomyelitis were admitted, in contrast to 235 patients with meningo-encephalitis. Furthermore, cultures of the faeces from patients with meningo-encephalitis had previously yielded predominantly poliomyelitis virus, but from August, 1956, onwards there was a sharp rise in the number of isolations of E.C.H.O. virus type 4.

In the majority of cases, the clinical features of meningitis were more pronounced than those of encephalitis. The condition was somewhat less acute than poliomyelitis, the duration of symptoms prior to admission to hospital being longer than that commonly observed in poliomyelitis itself. Reddening of the mucosa of the pharynx and prominence of the lymphoid tissue was a feature, and occasionally the spleen was palpable. The changes in the cerebro-spinal fluid were similar to those encountered in poliomyelitis. The condition appeared to be highly infective, and several members of the same household might be affected. The disease was believed to be caused by faecal contamination, and the incubation period possibly varied between ten and fourteen days.

Occasionally, a low intracranial pressure syndrome has been observed immediately after an attack of meningo-encephalitis. This syndrome may be associated with other intracranial disorders, particularly subdural haematoma, after head injury, etc. The clinical features are extremely characteristic, including particularly headache, dizziness and vomiting, which are precipitated by the assumption of the upright position and are quickly relieved by recumbency. The picture is a severe expression of a reaction which occasionally is observed after lumbar puncture.

Summary.

1. The classification of virus diseases of the central nervous system used follows that of Greenfield (1938), which is based on histopathological changes.

2. Poliomyelitis, arthropod-borne encephalitis and E.C.H.O. virus meningitis are the commonest virus infections of the nervous system encountered in Australia in recent years.

3. The post-infectious demyelinating disorders are considered separately as constituting possibly an allergic group.

References.

- ANDERSON, S. G. (1954), "Murray Valley Encephalitis and Australian X Disease", *J. Hyg.*, 53:447.
- ANDERSON, S. G., et alii (1952), "Murray Valley Encephalitis: Surveys of Human and Animal Sera", *M. J. AUSTRALIA*, 1:110.
- BLATTNER, R. J. (1956), "Cardiac Involvement in Certain Virus Diseases", *J. Pediatr.*, 49:234.
- CASALS, J. (1957), "The Arthropod-Borne Group of Animal Viruses", *Tr. New York Acad. Sc.*, Series 2, 19, Number 3.
- FERRARIO, A., and JERVIS, G. A. (1940), "Experimental Disseminated Encephalopathy in the Monkey", *Arch. Neurol. & Psychiat.*, 43:195.
- FORBES, J. A. (1958), "Meningitis in Melbourne Due to E.C.H.O. Virus", *M. J. AUSTRALIA*, 1:246.
- FRENCH, E. L. (1952), "Murray Valley Encephalitis: Isolation and Characterization of the Aetiological Agent", *M. J. AUSTRALIA*, 1:100.
- GREENFIELD, J. C. (1938), "Recent Advances in Pathology", 3rd Edition: 324.
- HOKAN, J. P., et alii (1944), "Distinctive Type of Encephalomyelitis Occurring Among Troops in the Northern Territory of Australia", *Brain*, 67:93.
- KARAT, E. A., WOLF, A., and BEZEM, A. E. (1947), "Rapid Production of Acute Disseminated Encephalomyelitis in Rhesus Monkeys by Injections of Heterologous and Homologous Brain Tissue with Adjuvants", *J. Exper. Med.*, 85:117.
- LUDFORD, C. G., and COOK, I. (1957), "Murray Valley Encephalitis: A Survey of Human and Animal Sera in Queensland", *M. J. AUSTRALIA*, 2:319.
- MILES, J. A. R., and HOWES, D. W. (1953), "Observations on Virus Encephalitis in South Australia", *M. J. AUSTRALIA*, 1:7.
- MORGAN, I. M. (1947), "Allergic Encephalomyelitis in Monkeys in Response to Injection of Normal Monkey Nervous Tissue", *J. Exper. Med.*, 85:131.
- PERRY, J., personal communication.
- RIVERS, T. M., and SCHWENTKER, F. F. (1935), "Encephalomyelitis Accompanied by Myelin Destruction Experimentally Produced in Monkeys", *J. Exper. Med.*, 61:689.
- ROBERTSON, E. G., and McLORINAN, H. (1952), "Murray Valley Encephalitis: Clinical Aspects", *M. J. AUSTRALIA*, 1:103.
- RUSSELL, D. S. (1956), "The Nosological Unity of Acute Hemorrhagic Leuco-Encephalitis and Acute Disseminated Encephalomyelitis", *Brain*, 78:369.
- RUSSELL, W. R. (1947), "Poliomyelitis: The Pre-Paralytic Stage, and the Effect of Physical Activity on the Severity of Paralysis", *Brit. M. J.*, 2:1022.
- STANLEY, N. F. (1952), "Encephalitis in Sydney: An Explosive Outbreak Associated with a Hitherto Undescribed Virus", *M. J. AUSTRALIA*, 2:38.
- SUTHERLAND, I. N. (1956), "Scottish Data on the Association Between Physical Activity and the Severity of Paralysis in Poliomyelitis", *Brit. J. Prev. Soc. Med.*, 10:58.

E.C.H.O. VIRUSES.

By D. M. McLEAN,

Commonwealth Serum Laboratories, Parkville, Victoria.

THE E.C.H.O. viruses or enteric cytopathogenic human orphan viruses (Science, 1955) are found usually in the alimentary tract of humans, more commonly in the faeces than in the throat washings. Frequently they are isolated from patients suffering from the aseptic meningitis syndrome, but they may be found in perfectly healthy individuals. The viruses multiply readily in tissue cultures of monkey kidney or human amnion, causing rounding, granularity and eventual death of the cells, that is they cause a cytopathogenic effect. Usually they do not multiply well in HeLa cells or other continuous line cell cultures. They do not cause recognizable disease after

¹Read at a meeting of the Section of Neurology, Neuro-Surgery and Psychiatry, with the Section of Pathology, Bacteriology, Biochemistry and Forensic Medicine, Australian Medical Congress (B.M.A.), Tenth Session, Hobart, March 1 to 7, 1958.

inoculation into any convenient laboratory animal, including new-born mice. For two reasons, therefore, the viruses were first labelled "orphans" (Melnick, 1956): they did not cause disease in any laboratory animal, and frequently they were isolated from normal healthy persons, so that they were in fact viruses without a host or a disease.

Any discussion of the E.C.H.O. viruses will include an account of the Coxsackie viruses (Dalldorf, 1949), since they may be found in the faeces and throat washings of patients with aseptic meningitis, herpangina and epidemic myalgia, and of normal people. These viruses all multiply after inoculation into new-born mice less than 24 hours old, causing myositis (group A) or encephalitis (group B). All five members belonging to group B multiply in tissue culture of monkey kidney, producing a cytopathogenic effect, and to a greater or less extent in HeLa cells also. All these viruses have caused epidemics of aseptic meningitis. Only one group A virus, A9, has caused cases of aseptic meningitis, and this virus is cytopathogenic for monkey kidney cultures, but not for HeLa cell cultures.

E.C.H.O. viruses are studied with the use of tissue cultures of monkey kidney or human amnion cells in stationary tubes (Melnick, 1956). HeLa cells in stationary culture tubes may be used regularly for virus isolations and antibody titrations with poliomyelitis and Coxsackie B1, B3, and B5 viruses (Syverton *et al.*, 1954, 1957; Crowell and Syverton, 1954). Strain-specific antisera have been prepared by repeated injections of monkeys with E.C.H.O. and Coxsackie viruses. The homologous antibody titre for each serum is determined against 100 tissue culture infective doses (TCID₅₀) of virus. Antiserum diluted to the end point represents one antibody unit. To type an unknown strain of virus, 100 TCID₅₀ of virus is mixed with antisera against a wide range of E.C.H.O. and Coxsackie strains, each of which is diluted to contain 20 antibody units. After incubation at room temperature for one hour, the serum-virus mixtures are inoculated into culture tubes. The virus causes a cytopathogenic effect in all tubes except those which contain specific antibody. Titration of antibody in sera from patients is performed similarly, using serial fivefold dilutions of serum and 100 TCID₅₀ of virus.

Between October 17 and November 11, 1955, eight persons who lived in Bourn, Cambridgeshire, and three contacts of these patients who were living in Cambridge became ill with aseptic meningitis. After an incubation period of between eight and 11 days, the patients became febrile and complained of severe headache, backache and vomiting, and neck stiffness was found on examination. No patient showed weakness or paralysis of the limbs or trunk at any time during the course of the illness. All patients had increased lymphocytes in the cerebro-spinal fluid during the first week of illness, and in eight instances granulocytes were detected also. No cases of poliomyelitis occurred in or around Bourn at the time of the aseptic meningitis outbreak, although cases of poliomyelitis occurred in other East Anglian communities at that time. However, an epidemic of aseptic meningitis due to E.C.H.O.-9 virus occurred near Ipswich at the same time (Boissard *et al.*, 1957).

Virus was isolated from the faeces of four patients by inoculation of faecal extracts into cultures of human amnion or monkey kidney cells. All strains of virus isolated from this and two subsequent outbreaks in Cambridge were antigenically identical (Table I). The Bourn virus strain was neutralized by sera prepared in monkeys against two American strains of E.C.H.O.-9 virus, Hill and Quigley, but not by antisera against E.C.H.O. viruses 1 to 8 and 10 to 14, Coxsackie A9 and B1 to B5, or poliomyelitis types 1 to 3 (McLean and Melnick, 1957). Convalescent sera from two Bourn patients neutralized both Bourn and Quigley strains of E.C.H.O.-9 virus at virtually the same titre, but neither virus was neutralized by the acute sera (Table II).

New-born mice were inoculated intracerebrally or subcutaneously with three strains of E.C.H.O.-9 virus, Hill, Quigley and Bourn, using undiluted tissue culture fluids each containing at least 10⁶ TCID₅₀ of virus. None of the mice inoculated with the Hill or Quigley strain succumbed

to the virus. However, all 19 mice injected subcutaneously with the Bourn strain became paralysed and died on the third or fourth day after injection, and 27 out of 32 mice injected intracerebrally developed paralysis and died between the third and sixth days. Sections of paralysed mice showed myositis which was indistinguishable from that produced by group A Coxsackie viruses. No lesions were seen in the brain or fat pads.

TABLE I.
Serological Relationships of Viruses Isolated in Cambridge.

Date of Epidemic.	Patient.	Days After Onset.	Serum Titres Against 1000 TCID ₅₀ of Virus Isolated from Each Patient.	
			A's Sera.	Homologous Sera.
October, 1955	A	3	0 [†] 50*	0 50
October, 1955	B	2	0 100+	0 100+
October, 1955	C	6	0 250	50 250+
October, 1955	D	7	0 50+	50 50
August, 1956	E	2	0 50+	0 50+
August, 1956	F	3	Not tested 250+	0 250+
August, 1956	G	6	0 50+	Not tested 50+
September, 1956	H	1	Not tested 50	0 250

* Titre of acute serum: 0 indicates <10.

* Titre of convalescent serum. (These footnotes apply also to Tables III to VI.)

Paired sera were obtained from all 11 patients in the Bourn epidemic and from nine family contacts. In five cases of aseptic meningitis and two asymptomatic contacts, neutralizing antibody against the Bourn strain of E.C.H.O.-9 virus was found in the convalescent or late sera, but it was not present in the acute or early sera. A further two patients had a low level of antibody in the

TABLE II.
Antigenic Relationships between Bourn Virus and Other E.C.H.O.-9 Strains.

Virus.	Serum Titres (50% End Point Against 100 TCID ₅₀ of Virus).				
	Bourn Patient A.		Hyperimmunized Monkey Sera.		
	Acute.	Convalescent.	E.C.H.O.-9 (Hill).	E.C.H.O.-9 (Quigley).	Other. [†]
Hill	Not tested	Not tested	15,625	1500	0
Quigley	0	100	15,625	2500	0
Bourn	0	50	5380	220	0

[†] Includes E.C.H.O. viruses 1 to 8, 10 to 14, Coxsackie viruses A9, B1-5, Poliomyelitis viruses 1-3.

acute sera, and a rising titre was detected in the convalescent sera. The remaining four patients and six contacts had high levels of antibody in both early and late sera. One family contact who showed a rising titre of antibody was found to be excreting Bourn virus when a rectal swab taken at the time of obtaining the early blood sample was examined for virus (Table III).

During late July and early August, 1956, many servicemen and their families who lived on a Royal Air Force Station near Huntingdon suffered from severe headache and fever, and in some cases this was accompanied by a

morbilliform rash. No patient had neck stiffness, and lumbar puncture was not performed. Stool specimens and paired sera were obtained from members of three households. E.C.H.O.-9 virus was isolated from three stools. Rising titres of neutralizing antibody to two current strains of virus and the Bourn strain of E.C.H.O.-9 virus were detected in all four serum pairs tested, and a high titre was detected in a single convalescent serum obtained from one patient who excreted the virus (Table IV).

Shortly after resuming school in September, 1956, a school-boy developed severe headache and fever, but there was no neck stiffness and no rash. During the next three days, three of his study mates complained of the same symptoms. Throat washings and rectal swabs were collected from each patient

TABLE III.

Neutralization Tests on Sera Taken During the Bourn Epidemic, October, 1955.

Cases.				Contacts.		
Patient.	Virus Isolation.	Days After Onset.	Antibody Titre Against E.C.H.O.-9 Virus.	Patient.	Days After Onset.	Antibody Titre Against E.C.H.O.-9 Virus.
I	Not tested	7 20	250+ 250+	P	23 ^a 43	0 50+
J	0	4 16	50 250	Q	24 49	0 0
K	0	5 20	250+ 250+	R	23 43	100+ 100+
L	0	3 16	50 250	S	23 43	10 10
D	+	6 18	250 250	T	23 43	100+ 100+
C	+	5 17	0 50	U	23 43	100+ 100+
M	0	5 18	0 250	V	23 43	100+ 100+
A	+	3 16	0 50	W	23 43	100+ 100+
B	+	2 13	0 250	X	23 49	0 50+
N	0	3 13	0 250+	Y	21	0
O	0	5 14	250+ 250+	Z	21	10
				AA	27	50+
				BB	23	0
				CC	24	50

^a Virus isolated by Dr. G. F. D. Boissard.

^b E.C.H.O.-9 virus isolated from a rectal swab taken on this day.

three days after the first boy became ill. E.C.H.O.-9 virus was isolated from throat washings of one patient. Rising titres of neutralizing antibody against this strain of virus were detected in paired sera from all four patients.

A large epidemic of aseptic meningitis due to E.C.H.O.-9 virus occurred at Nottingham at the time of this outbreak in Cambridge (Tyrrell and Snell, 1956).

Since E.C.H.O.-9 virus was the only antigenic type of virus isolated in these three outbreaks of aseptic meningitis in East Anglia during 1955 and 1956, and in each outbreak rising titres of antibody to E.C.H.O.-9 virus were found in paired sera from patients, we conclude that E.C.H.O.-9 virus caused these epidemics of aseptic meningitis. In each epidemic, the symptomatology was that of an aseptic meningitis of varying severity, but in the Huntingdon outbreak a morbilliform rash was noted in addition to headache and fever. Rhodes (1957) has recently described an epidemic which occurred in eastern Ontario, in which many patients who were infected with an E.C.H.O. virus had a macular rash on the face and extremities in addition to aseptic meningitis.

In the State of Minnesota, U.S.A., during 1956, physicians reported 179 cases of "epidemic poliomyelitis" to the State Board of Health. Of these patients, 66 had one or more limbs paralysed, and 113 showed no weakness or paralysis at any time during their illness (Table V). Of the 113 patients with the aseptic meningitis syndrome, 62 patients who became ill between July and December, 1956, excreted a virus other than poliomyelitis in their faeces, 61 of which strains were identified as Coxsackie B5 (Syverton *et al*, 1957). Coxsackie B5 virus was found in 15 out of 28 patients from whom throat washings were

TABLE IV.

Neutralization Tests on Sera Taken During the Huntingdon Epidemic.

Virus Strain.	Sera of Patients.				
	E.	F.	DD.	EE.	B (Bourn).
Patient E	10 50+	20 250+	0 250+	Not tested Not tested	10 250+
Patient F	Not tested 250+	0 250+	0 250+	0 250+	0 250+
Bourn strain (E.C.H.O.-9)	Not tested 250+	0 250+	0 50	Not tested Not tested	0 250+

obtained, but it was not isolated from cerebro-spinal fluid. Coxsackie B5 strains isolated in HeLa cell cultures from 36 patients produced acute encephalitis and death five to 14 days after intracerebral injection into two or three litters of new-born mice. Only one patient suffering from aseptic meningitis in 1956 excreted a virus other than poliomyelitis or Coxsackie B5; strains of Coxsackie B3 virus were obtained from faeces and throat washings.

Poliomyelitis viruses were isolated from the faeces of 42 paralytic and five non-paralytic patients, of which 39 strains were type 1, and eight strains were type 3. There were no instances in which both poliomyelitis and a Coxsackie virus were isolated.

TABLE V.

Poliomyelitis and Aseptic Meningitis in Minnesota, 1956.

Type of Illness.	Virus Isolation.		
	Poliomyelitis. ¹	Coxsackie B5.	Other.
Paralytic poliomyelitis (66 cases)	42	0	0
Aseptic meningitis (113 cases)	5	61	1 ²

¹ Includes 39 strains of type 1 and eight strains of type 3 poliomyelitis virus.

² Coxsackie B3 virus.

Neutralization tests with paired sera from 33 patients against the prototype Coxsackie B5 strain Faulkner showed that nine patients had fivefold or greater increases in titre. Four of these patients had no antibody in the first serum sample. Antibody was present in the early serum sample from 23 patients, but no significant rise in titre was detected in the late sample. Serum from the patient who excreted Coxsackie B3 virus had no antibody to Coxsackie B5; but a rise in titre from 10 to 50 was shown against Coxsackie B3. Antibody was detected in sera as early as the first day after onset (one patient) or the second day (four patients). Two patients lacked detectable antibody as late as five days after onset, although it was present 10 days later. Further tests using paired sera from six patients showed that the antibody response against the Faulkner strain and the patient's own strain of Coxsackie B5 virus was virtually the

same (Table VI). In 42 serum pairs there was no significant change in antibody titre against poliomyelitis virus types 1, 2 and 3.

Faecal extracts from 19 Minnesota patients were inoculated simultaneously into tissue cultures of monkey kidney, HeLa, oesophagus and liver cells. The last three cell systems were prepared from continuous line cultures. Virus was isolated from all 19 samples by the use of HeLa, oesophagus and monkey kidney cells, and in 17 out of 19 samples in which liver cells were used. The titre of Coxsackie B5 virus in 10 of the faecal extracts was practically identical when titrated simultaneously in HeLa, oesophagus and monkey kidney. Titres of virus in individual faecal extracts ranged between $10^{4.0}$ and $10^{5.7}$ TCD₅₀ per millilitre. Thus for Coxsackie B5 virus, HeLa and oesophagus cells were equally as satisfactory as monkey kidney cells for the purpose of isolating virus from faeces.

TABLE VI.
Serological Relationships of Coxsackie B5 Virus Strains Isolated in Minneapolis to the Prototype Strain.

Virus from Patient.	Days After Onset.	Antibody Titres of Serum.		
		Homologous Patient.	Patient 61.	Prototype Monkey.
5	0	20	0	
	7	100	20	1000
31	1	100		
	12	250+		5000
34	1	20		
	11	100		1000
55	2	20	0	
	12	100	100	5000
56	2	100		
	12	250+		5000
61	3	0	0	
	10	50	50	5000
Prototype Coxsackie B5 (Faulkner strain)			0	
			100	5000

Prior to the onset of aseptic meningitis, six patients had received one injection of formalized trivalent poliomyelitis vaccine, 23 had received two injections, one had received three injections and 31 had not been vaccinated. It is evident that vaccination against poliomyelitis did not affect the rate of symptomatic infection by Coxsackie B5 virus.

At the laboratories of the Ohio State Department of Health during 1956, viruses were isolated from 101 stool specimens and one cerebro-spinal fluid specimen out of 298, which were taken from patients or contacts of patients who suffered primarily from poliomyelitis or aseptic meningitis (McLean *et alii*, 1957). Poliomyelitis viruses were isolated from 28 patients with paralytic disease and from 40 patients with a non-paralytic illness. Of the remaining 34 isolates, all of which came from patients with the aseptic meningitis syndrome, we identified nine strains of Coxsackie B3 virus, eight strains of Coxsackie B2, four strains of Coxsackie A9, two strains each of Coxsackie B5 and E.C.H.O.-6, one strain each of E.C.H.O.-3 and E.C.H.O.-9, and eight strains were not identified (Table VII). Coxsackie B3 virus was isolated from the cerebro-spinal fluid of one non-paralytic patient.

Ten patients with aseptic meningitis had received two or three injections of trivalent formalized poliomyelitis vaccine, three patients received one injection and 13 patients had not received any vaccine prior to the onset of their illnesses.

Coxsackie B2 and B3 strains, although isolated from the patient by inoculation of faecal extract into cultures of HeLa cells on some occasions, gave low titre irregular end points when titrated in HeLa cell cultures. However, these strains multiplied to high titre in monkey kidney cultures. Virtually all identifications of viruses were

performed in monkey kidney cultures. These results are in sharp contrast to the Minnesota strains of Coxsackie B5 virus which multiplied equally well in both HeLa and monkey kidney cultures.

One patient who excreted Coxsackie A9 virus in the faeces at the time of illness had no neutralizing antibody against this immunotype in a serum sample obtained soon after the onset of illness. A sample of serum obtained about a fortnight later contained neutralizing antibody. Rising antibody titres were also demonstrated for two patients, one of whom excreted Coxsackie B2 virus and the other Coxsackie B3 virus at the time of their respective illnesses.

In Ohio, in contradistinction to Minnesota and Cambridgeshire, cases of aseptic meningitis due to several different antigenic types of Coxsackie or E.C.H.O. virus occurred together in several communities. The greatest

TABLE VII.
Virus Isolations from 298 Patients with Poliomyelitis or Aseptic Meningitis in Ohio, 1956.

Type of Illness.	Virus Isolation.					
	Poliomyelitis.			Not Poliomyelitis.		
	Type 1.	Type 2.	Type 3.	Coxsackie.	E.C.H.O.	Not Typed.
Paralytic poliomyelitis	23	1	4	0	0	0
Aseptic meningitis	34	0	6	22	4	8

concentration of cases occurred in and around the city of Akron, Ohio, where we identified five strains of Coxsackie B3 virus, three strains of Coxsackie B2, two strains of E.C.H.O.-6 and one strain each of Coxsackie A9 and E.C.H.O.-9. In this district there was no evidence of prior contact between patients except in the case of two brothers who became ill at the same time, and both were found to be excreting Coxsackie B3 virus. Coxsackie A9, B2 and B3 viruses each caused infection in widely scattered areas throughout the State. However, there was no evidence that patients were infected simultaneously with more than one type of virus, such as happened in an epidemic of "summer gripp" in Akron, Ohio, during 1947, where patients were infected concurrently with poliomyelitis and Coxsackie virus (Melnick *et alii*, 1950). It is interesting to note that Melnick *et alii* isolated the prototype Redmond strain of Coxsackie B2 virus in 1947 from the same area, where three strains of Coxsackie B3 virus were isolated in 1956.

Although a very common manifestation of infection with either a Coxsackie B virus (McLeod *et alii*, 1956) or an E.C.H.O. virus is aseptic meningitis, other syndromes have been encountered in which the aetiology appears to be an E.C.H.O. virus. Rhodes (1957) has described an epidemic of fever and morbilliform rash which occurred in Ontario recently, and the only infective agent recovered was an E.C.H.O. virus. Similarly, in Cambridge, about half the patients in the epidemic of August, 1956, had a transient morbilliform rash in addition to headache and fever. The Boston-Pittsburgh exanthem described by Neva (1956) was caused by strains of virus now typed as E.C.H.O.-16.

Although some antigenic types of E.C.H.O. and Coxsackie viruses undoubtedly cause epidemics, they may also be found endemic in certain communities such as Charleston, West Virginia, and Phoenix, Arizona (Craig *et alii*, 1956), or the Philippines (Hammon *et alii*, 1957). Not only was an E.C.H.O. virus isolated from stools of people who remained completely asymptomatic throughout the period of observation, but also the detection of neutralizing antibody against this virus in sera obtained subsequent to, but not before, excretion of virus confirmed that the E.C.H.O. virus caused asymptomatic infection. In both study groups some persons were found to be

excretors of poliomyelitis virus, but no clinical illness followed. Honig *et alii* (1956) showed that persons who belonged to the lower socio-economic categories were more frequent excretors of an enteric virus than those of the higher socio-economic groups, and this was probably due to better sanitation and more personal cleanliness in the latter group.

Reports from several laboratories in England and Europe (Boissard *et alii*, 1957; Krech, 1957; Nihoul *et alii*, 1957) indicate that E.C.H.O.-9 virus caused widespread infection during 1955 and 1956, at the time when outbreaks occurred in Cambridgeshire (McLean and Melnick, 1957). Similarly, in Minnesota during 1956, Coxsackie B5 virus was virtually the only non-poliomyelitis enteric virus which caused aseptic meningitis. However, during 1955, 53 cases of aseptic meningitis occurred in Marshall County, Iowa, somewhat south of Minnesota (Lehan *et alii*, 1957) and the only non-poliomyelitis virus which was isolated regularly from the stools of sick patients, patients with minor illnesses and normal family contacts was E.C.H.O.-4 (Chin *et alii*, 1957). Fourfold or greater increase in neutralizing antibody titre against E.C.H.O.-4 virus, which was found in 14 persons out of 25 from whom paired serum samples were obtained, confirmed that E.C.H.O.-4 virus caused the epidemic. In Erie County, New York, which includes the city of Buffalo, a large epidemic of aseptic meningitis which occurred during the summer of 1955 was due to E.C.H.O.-6 virus (Karon *et alii*, 1956). At the same time, the principal cause of aseptic meningitis in the New England States was E.C.H.O.-6 virus (Davis and Melnick, 1956). Thus, in a number of recent outbreaks of aseptic meningitis, a single aetiological agent (E.C.H.O.-4, E.C.H.O.-6, E.C.H.O.-9 or Coxsackie B5) has been incriminated.

Although trivalent formalized poliomyelitis vaccine has been shown to be highly effective in preventing paralysis due to poliomyelitis virus (Francis *et alii*, 1955), the foregoing results show that it does not reduce the incidence of symptomatic infection with Coxsackie or E.C.H.O. viruses. If one serotype of virus regularly causes epidemics in communities throughout a State each year, it may be desirable to include a formalized preparation of this virus in the trivalent poliomyelitis vaccine in an attempt to reduce the number of cases of aseptic meningitis due to this virus.

Summary.

Enteric viruses were isolated from patients during outbreaks of aseptic meningitis in East Anglia during 1955 and 1956 (mouse pathogenic strains of E.C.H.O.-9 virus) and in Minnesota during 1956 (Coxsackie B5 virus). Rising titres of neutralizing antibody in patients' paired sera confirmed that these viruses had infected patients in each outbreak respectively. The role of E.C.H.O. and Coxsackie viruses in the aetiology of aseptic meningitis is discussed.

References.

- BOISSARD, G. P. B., MACRAE, A. D., STOKES, L. J., and MACCALLUM, F. O. (1957), "Isolation of Viruses Related to E.C.H.O. Virus Type 9 from Outbreaks of Aseptic Meningitis", *Lancet*, 1: 500.
- COMMITTEE ON E.C.H.O. VIRUSES (1955), "Enteric Cytopathogenic Human Orphan E.C.H.O. Viruses", *Science*, 123: 1187.
- CHIN, T. D. Y., BERAN, G. W., and WENNER, H. A. (1957), "An Epidemic Illness Associated with a Recently Recognized Enteric Virus (E.C.H.O. Virus Type 4) II. Recognition and Identification of the Etiologic Agent", *Am. J. Hyg.*, 66: 76.
- CROWELL, R. L., and STYVERTON, J. T. (1954), "Cytopathogenic Effect of Coxsackie Viruses in Human Epithelial Cell Lines", *Fed. Proc.*, 13: 489.
- DAVIS, D. C., and MELNICK, J. L. (1956), "Association of E.C.H.O. Virus Type 6 with Aseptic Meningitis", *Proc. Soc. Exper. Biol. & Med.*, 92: 839.
- DALLDORF, G. J. (1949), "The Coxsackie Group of Viruses", *Science*, 110: 594.
- FRANCIS, T., JUNIOR, KORN, R. F., VOIGHT, R. B., BOISEN, M., HEMPHILL, F. M., NAPIER, J. A., and TOLCHINSKY, E. (1955), "An Evaluation of the 1954 Poliomyelitis Vaccine Trials. Summary Report", *Am. J. Pub. Health*, 45, Part II.
- HAMMON, W. McD., LUDWIG, E. H., SATHER, G., and YOHM, D. S. (1957), "Comparative Studies on Patterns of Family Infections with Polioviruses and E.C.H.O. Virus Type I on an American Military Base in the Philippines", *Am. J. Pub. Health*, 47: 802.
- HONIG, E. L., MELNICK, J. L., ISAACSON, P., PARR, R., MYERS, I. L., and WALTON, M. (1956), "An Endemological Study of Enteric Virus Infections: Poliomyelitis, Coxsackie and Orphan (E.C.H.O.) Viruses Isolated from Normal Children in Two Socio-Economic Groups", *J. Exper. Med.*, 103: 247.
- KARON, D. T., BARRON, A. L., WINKELSTEIN, W., JUNIOR, and COHEN, S. (1956), "Isolation of E.C.H.O. Virus Type 6 during Outbreak of Seasonal Aseptic Meningitis", *J.A.M.A.*, 162: 1292.
- KRECH, U. (1957), "Über das Vorkommen von Echo-Virus in der Schweiz", *Schweiz. med. Wochenschr.*, 87: 558.
- LEHAN, P. H., CHICK, E. W., DOTO, I. L., CHIN, T. D. Y., HEEREN, R. H., and FURCOLOW, M. L. (1957), "An Epidemic Illness Associated with a Recently Recognized Enteric Virus (E.C.H.O. Virus Type 4). I: Epidemiologic and Clinical Features", *Am. J. Hyg.*, 66: 63.
- MCLEAN, D. M., CROFT, C. C., PRINCE, J. T., and HECKMANN, E. E. (1957), "Coxsackie and E.C.H.O. Virus Infections in Ohio during 1956", *Ohio State M. J.*, 53: 907.
- MCLEAN, D. M., and MELNICK, J. L. (1957), "Association of Mouse Pathogenic Strain of E.C.H.O. Virus Type 9 with Aseptic Meningitis", *Proc. Soc. Exper. Biol. & Med.*, 94: 656.
- MCLEOD, D. L., BEALE, A. J., MCNAUGHTON, G. A., and RHODES, A. J. (1956), "Clinical Features of Aseptic Meningitis Caused by Coxsackie B Virus", *Lancet*, 2: 701.
- MELNICK, J. L. (1955), "Tissue Culture Techniques and Their Application to Original Isolation, Growth and Assay of Poliomyelitis and Orphan Viruses", *Ann. New York Acad. Sci.*, 61: 754.
- NEVA, F. A. (1956), "A Second Outbreak of Boston Exanthem Disease in Pittsburgh during 1954", *New England J. Med.*, 254: 838.
- NIHOUL, E., ANERCIN-THIERY, L., and WETNANTS, A. (1957), "E.C.H.O. Virus Type 9 as the Agent Responsible for an Important Outbreak of Aseptic Meningitis in Belgium", *Am. J. Hyg.*, 66: 102.
- RHODES, A. J. (1957), in discussion at a conference on Cellular Biology, Nucleic Acids and Viruses, *Ann. New York Acad. Sci.*, in the press.
- STYVERTON, J. T., SCHERRER, W. F., and ELLWOOD, P. M. (1954), "Studies on the Propagation in Vitro of Poliomyelitis Viruses. V. The Application of Strain Hela Human Epithelial Cells for Isolation and Typing", *J. Lab. & Clin. Med.*, 43: 286.
- STYVERTON, J. T., MCLEAN, D. M., MARTINS DA SILVA, M., DOANT, H. B., COONEY, M., KLENNMAN, H., and BAUER, H. (1957), "Laboratory Clinical and Epidemiological Study of an Outbreak of Aseptic Meningitis Caused by Coxsackie B5 Virus", *J.A.M.A.*, 164: 2015.
- TYRELL, D. A. J., and SNELL, B. (1956), "Recovery of a Virus from Cases of an Epidemic Exanthem Associated with Meningitis", *Lancet*, 2: 1028.

STEATORRHOEA IN CHILDHOOD.¹

By CHARLOTTE M. ANDERSON,
Clinical Research Unit, Royal Children's Hospital,
Melbourne.

IN this paper the term steatorrhoea will be defined, then the means of demonstrating its presence in the patient will be discussed, and the clinical material referred for examination during a five-year period will be analysed, with brief reference to the follow-up studies of some of the patients.

The word steatorrhoea is used loosely in clinical medicine. A child is often said to be suffering from steatorrhoea if he passes stools which are loose and pale in colour for any length of time. On the other hand, the word may be used more comprehensively to describe a clinical syndrome or set of signs and symptoms, and it is often used synonymously with the rather vague terms celiac syndrome or sprue syndrome. However, if the word is used in its correct meaning, it should be applied only to patients whose stools have been proven to contain more fat than normal. This implies a biochemical assessment of the stool, and in all the patients included in this study the presence of steatorrhoea has been proven or disproven biochemically. However, most of the patients

¹ Read at a meeting of the Section of Pediatrics, Australasian Medical Congress (B.M.A.), Tenth Session, Hobart, March 1 to 7, 1958.

were referred with a clinical diagnosis of steatorrhoea, and the primary object of this study, during the past five years, has been to try to separate them into groups, and carefully define the clinical features of the different groups. Clinical diagnosis is of course always the best and most economical means of recognizing a disease, and it is hoped to show that this can be achieved in most of these patients with the use of a minimum of relevant and confirmatory biochemical and other tests.

The absorption of ingested food products is highly efficient, and over 90% of fat, protein and carbohydrate is absorbed by the normally functioning small bowel. Maximal absorption depends on three factors: adequate digestion by enzymes, an efficient and adequate absorbing surface and normal motility patterns. Therefore, malabsorption resulting in steatorrhoea may occur for a variety of reasons, and may be present, temporarily, if looked for, in many gastro-intestinal upsets. Over the years, many tests have been introduced to demonstrate malabsorption, but one by one have fallen into disuse. They have chiefly been designed to test the absorption of a particular substance during a short period. Most have been discarded because of the non-uniformity and unreliability of results, and balance techniques still remain the best means of demonstrating malabsorption.

Fat is the substance that has achieved most attention in the stool, partly because it is clinically the most obvious abnormal component of a stool, and also because methods of quantitative estimation of fat are less arduous and less open to interfering factors than those of estimating protein or carbohydrate. However, if the stool fat content is elevated, it is highly likely that stool protein and carbohydrate contents will be elevated. Fat appears in the stool in two forms—undigested or neutral fat and digested or split fat—depending on the presence of adequate enzymes and bile. The former appears as droplets of oil, and the latter as fatty acid crystals or soaps.

A personal observation of the stool both macroscopical and microscopical is important, but by no means diagnostic. Stool appearance may vary greatly. Pallor does not always mean the presence of fat, and fatty stools may not always be loose. Perhaps the only two features which can be said to be anything more than suggestive are the observation of oily matter (like melted butter) in the stool on macroscopic examination, and the appearance of numerous fat globules on microscopic examination. The former is a very useful clinical point, especially if commented on by the mother. The latter is useful as a screening test and is easily done.

A simple examination of a small portion of faeces under the microscope, even without any staining procedure, is sufficient. Fat droplets are easily seen, but should be present in large numbers to be significant. Fatty acids and soaps, although easily identified, cannot be assessed quantitatively by this method. They are normally present in a certain amount, and may be very obvious in even the normal stool of a baby.

Fat globules are seen in conditions in which the digestion of fat is incomplete, such as fibrocystic disease of the pancreas, in conditions in which the passage of food through the gut is hurried, as in acute diarrhoea, or in the absence of bile, as in obstructive jaundice. Fat droplets are not usually seen in any numbers in coeliac disease, in which the digestion of fat is complete, but absorption impaired. Clinically, microscopic examination of the stool for fat is of most value in the group of babies and young children with resistant chest infection, who are suspected of suffering from fibrocystic disease of the pancreas.

The biochemical demonstration of the presence of steatorrhoea, or excess fat in the stool, can be done effectively in children only by a fat balance study, in which for a period of days the dietary intake and total faecal excretion of fat are measured. Single estimations of fat in dried stool are inaccurate, and have been discarded by most paediatric laboratories (Table I). Simple laboratory methods are now available for the estimation of fat in stools. However, a fat balance estimation necessitates

admission to hospital for a short period, and careful nursing attention to dietary detail and stool collection, and is best carried out in a small section of the hospital devoted to tests of this nature.

The presence of adequate pancreatic enzymes is best demonstrated by duodenal intubation, but with increasing knowledge of the clinical groups showing steatorrhoea this investigation is being less frequently performed.

Analysis of Clinical Material.

The records of patients referred for investigation will now be analysed. Even during the course of this five-year study, new knowledge of some of the clinical entities, and especially fibrocystic disease of the pancreas, has appeared, and increasing clinical experience with these conditions renders such complete investigation as has been carried

TABLE I.
Comparison of Four-Day Fat Balance with Percentage of Fat in Dried Stool in 95 Patients.

Fat Balance for Four Days.		Percentage of Fat in Dried Stool.		
Absorption Percentage.	Number of Patients.	30 or Less.	30 to 40.	Over 40.
Over 90	11	8	2	1
85 to 90	14	8	5	1
85 or less	67	7	22	38

out for each of these patients unnecessary. One would like to stress at this stage that the most important investigation in differentiating the groups to be described is the clinical history. Careful and complete details with particular reference to the onset, continuity and time sequence of symptoms, together with the checking of growth and development by objective evidence such as health centre weight charts, are important.

During five years, 169 patients were investigated, and four main clinical groups were encountered. Patients were referred with varied clinical stories, but the one common feature was that they were suspected of showing excess fat in the stool, or steatorrhoea. There were 32 patients with true coeliac disease, and 72 with fibrocystic disease of the pancreas, so they are the two most important groups. The third group of 22 patients, those with steatorrhoea of varied aetiology, illustrate the other varied clinical states in which steatorrhoea may be present. Six of these 22 patients had steatorrhoea associated with bowel infection, three associated with chronic chest suppuration, four associated with hepatitis, six associated with an anatomical abnormality of the intestinal tract, and three associated with poor nutrition. Any one of these conditions is very uncommon, compared with the two main groups.

The fourth group of 43 patients, in whom at the time of examination no steatorrhoea was demonstrated, is an interesting one, and worthy of considerable discussion which this paper is too short to include. Nine patients in this group had persistent subacute diarrhoea, of whom three were infected (two with *Giardia* and one with *Salmonella*), and in six cases the condition was post-infective. Ten patients had persistent chest infection. Attention is drawn particularly to the group of 24 patients with periodic symptoms, such as recurrent bouts of vomiting, abdominal pain, diarrhoea and pale stools. Such cases receive a wide variety of names, sometimes depending on the country or medical community in which they occur. These include fat intolerance, abdominal migraine, abdominal allergy, periodic syndrome and psychosomatic disorder. The characteristic features of this group are that the symptoms are intermittent, there is rarely any interference with over-all health, nutrition and growth, and included are a high proportion of emotionally labile children with similar parents.

Celiac Disease.

On reviewing the 32 cases of true celiac disease, the outstanding features are the uniformity of the clinical story, and the close parallel with Gee's original description of the disease. These cases are in children who go through a normal babyhood until some time after the introduction of mixed feeding. Then there is a slow but relentless progression of certain symptoms and signs, such as slowing of weight gain or loss of weight, diminution in appetite, diminution in vigour, alteration of temperament, protuberance of the abdomen, and an increase in the number and size of stools with increasing pallor of both the child and the stools. Examination of these children always reveals some degree of abdominal distension, usually considerable. Evidence of loss of weight is present, as well as poor muscle tone and often some degree of anaemia. Fat balance is the one investigation that is absolutely necessary, as the presence of steatorrhoea must be shown before a diagnosis of celiac disease can be entertained. No doubt in the early stages of the disease steatorrhoea may not yet be present, but there is so far no single test that will enable a diagnosis of this condition to be made then. The diagnosis is made from the typical clinical story with its insidious and prolonged onset, and from the demonstration of steatorrhoea or malabsorption for which other causes are excluded. Many children may show temporary and transient symptoms of a suggestive type in the toddler period, such as an alteration of stool habit, with slackening of appetite and weight gain, but in the absence of proven steatorrhoea and abdominal distension the diagnosis is unlikely to be that of true celiac disease. As can be seen from the fact that only 32 patients with celiac disease were admitted to the Children's Hospital in five years, this is an uncommon disease, and as the treatment involves a lengthy period of dietary restriction, correct diagnosis at the outset is essential.

Further analysis of these 32 patients reveals that 14 were males and 18 females, there was no family with more than one case, and there did not seem to be an undue proportion of digestive upsets in the parents. The age of onset of noticeable symptoms was from six months to two years, with the average at fourteen months. In 15 cases, the duration of symptoms before diagnosis was two to six months, and in 17 cases more than six months. Abdominal distension was present in all. The bowel actions were loose, pale and frequent in 28, constipated in three and not considered abnormal in appearance and number in one. These features emphasize some of the main clinical points. It is noted that the child with celiac disease can be constipated. Thirteen patients showed some degree of hypochromic microcytic anaemia, but 18 did not. One patient showed a macrocytic anaemia. Steatorrhoea was present in all, the fat balances ranging from 52% absorption to 89%, with the average at 76%. Pancreatic enzymes were present in normal quantities in all patients. In none was there any pathogenic organism found in the stools, and the response to the Mantoux test was negative. Barium meal X-ray examination with follow through revealed no anatomical abnormalities in the arrangement of the gut.

One child in the series died. The others have all been treated with a wheat and rye gluten-free diet, and have done very well, growing and gaining weight normally, apart from one child. In this case the mother is of low intelligence, and the diet was discontinued after about three months. The child was lost sight of until recently, when she was found to be undersized; she weighed twenty-five and a half pounds at five years and had a very protuberant abdomen. Eighteen of the children have been kept very strictly to their dietary regime. In recent months, nine of the other patients have had their diet relaxed after several years' treatment, and in six of these the mother has noticed recurrence of mild clinical symptoms. Three of the patients have not answered follow-up letters.

To summarise, true celiac disease is a relatively rare condition; the diagnosis is a clinical one, with biochemical

confirmation of steatorrhoea, and exclusion of other causes of this steatorrhoea. Treatment by the exclusion of only wheat and rye flour from the diet is satisfactory, but the dietary restriction should be continued through the growing period of the child in order to obtain maximal health and growth. Relapse may be very insidious.

Fibrocystic Disease of the Pancreas.

When the second group of patients are considered, those with fibrocystic disease of the pancreas, it is noted that this is a much commoner condition than celiac disease. In fact the total number of these patients admitted to hospital in the five-year period was actually 108, although only 72 were investigated fully before death.

Fibrocystic disease of the pancreas has now revealed itself to be a congenital, genetically determined, generalized disorder, in which the mucous secretions of the body are abnormally viscid, and the sweat has an elevated concentration of salt. This produces several groups of symptoms and signs, notably pancreatic insufficiency, resulting in faulty nutrition, with abdominal distension and fatty stools, thus resembling celiac disease, but in addition there is the very constant presence of persistent suppurative bronchitis and bronchiolitis with staphylococcal infection. Some patients may also show liver fibrosis, and some may show clinical evidence of excessive salt loss in the sweat in hot weather.

The chief differences from celiac disease in the clinical presentation of this condition are the early onset of symptoms, usually from birth, the presence of other affected members in the family, good appetite and normal temperament, the persistent presence of chest infection, and the presence of fat globules in the stools. Investigations reveal other definite differences, such as the absence of pancreatic enzymes and the elevated levels of sweat electrolytes. With our increasing clinical awareness of this disease, most patients present at an early age, in fact earlier than patients with celiac disease, so that in many cases the differential diagnosis does not arise. However, the clinical pattern is very different, and a careful taking of the history and an examination with perhaps a microscopic examination of the stool will make the diagnosis almost certain in a large proportion of cases, and only confirmatory tests are necessary. At present it is considered that the estimation of sweat electrolytes is the easiest test, and as reliable as any of the other investigations. Table II

TABLE II.

Fibrocystic Disease of the Pancreas in 72 Patients Investigated During Life.

Test.	Number Tested.	Result.
Fat globules in stool	72	Present in 69.
Fat balance	41	Average absorption, 60% (range, 10% to 92%).
Pancreatic enzymes	55	Absent in 50, reduced in five (elevated sweat electrolytes).
Sweat electrolytes	55	Elevated in 51, normal in four (no enzymes).

shows the groups of tests used during this investigation, but during the five years the sweat test was introduced, and in some cases fat balance studies and duodenal intubation were not carried out. It can be seen that all aspects of the disease are not present in every case, but when the clinical story is suggestive, confirmation can usually be obtained from the sweat electrolytes. Only if these levels are normal and the clinical evidence is still strong is it necessary to carry out duodenal intubation. Fat balance study is not a necessary investigation in this group.

Treatment of fibrocystic disease of the pancreas is not by any means satisfactory, as can be seen from the fact that only 49 of the 108 patients admitted to hospital are now alive. The majority of the deaths occurred when the

children were under one year of age. However, if they survive beyond that age, then the prognosis is not so gloomy. In a series of 35 of these children personally treated and followed, 21 males and 14 females, 14 patients are now between six and 10 years old, seven patients between 10 and 14, and two over 14. All patients old enough attend school, and only five of them have been admitted to hospital on more than the original diagnostic occasion. Most of them are under average height and weight, although 21 are within the normal lower range. Eighteen of the children are free of chest infection at present, but 17 have varying degrees of persistent suppurative lung infection. Twelve of these are maintained on some antibiotic permanently, whilst the others have intermittent courses. However, the disease does vary in severity, and it is not only treatment which is responsible for the survival of some of these children to their present age.

Summary.

It can be seen that steatorrhea or the passage of fatty stools in childhood occurs most commonly in two separate clinical entities, both of which can be diagnosed from their own clinical features with recourse only to confirmatory biochemical tests. There is no real justification for including these two diseases under the collective heading of *celiac syndrome any longer, or in fact for now using that term at all*. Other patients showing steatorrhea are uncommon, and in many of them the steatorrhea is an incidental finding, the diagnosis of the underlying clinical condition being obvious from other signs and symptoms. A large group of patients with intermittent gastro-intestinal symptoms are often suspected of showing steatorrhea; but in the absence of some clinical evidence of defective nutrition or abdominal distension, or continuity of symptoms over a long period, the presence of steatorrhea is extremely unlikely in these children.

ULTRASONIC THERAPY.

By LEIGH T. WEDLOCK,
Melbourne.

ULTRASONIC THERAPY is an apt subject for discussion, because at the present time all over the world there are widely divergent views on the efficacy of this form of treatment. In the Continental countries and in some centres of the U.S.A. there is almost fanatical enthusiasm, whereas in Great Britain it has been almost discarded. My own view is in line with that held at the Mayo Clinic; there it is held that this therapy has something to offer, but the erratic results indicate that further research is necessary in this field.

The term ultrasonic is applied to sound waves at a frequency beyond that of human audibility (16 to 16,000 cycles per second). Such frequencies have been used in nature for a long time—the dog's ear can detect a much higher frequency than the human ear, and hence the "inaudible" dog whistle. The bat navigates in the dark by using a sonic radar at a frequency of 60 kilocycles. As long ago as 1917, Langiven at Toulon Arsenal found that small fish were killed when they entered the path of an ultrasonic beam used for submarine communication under water; but it was not until 1938 that Pohlman first investigated the therapeutic use of ultrasonic energy.

The frequency commonly employed is 800 kilocycles per second, though occasionally a higher frequency of 3000 is employed. Electrically-induced mechanical deformation of a piezo crystal is conveyed to a thin metal plate in the sound head which is applied to the patient.

Unlike audible sound, ultrasound is transmitted as a localized beam; hence, local effects on the body are con-

fined to the vicinity of the beam. Furthermore, unlike audible sound, ultrasound is completely absorbed by even a thin film of air. In treatment, if the energy is to reach the patient, it is essential to exclude any intervening air space by the use of a coupling medium such as paraffin oil or water.

Ultrasound applied to the body results in a violent shaking or micro-massage of the tissues. The to-and-fro motion of individual particles is less than one ten-thousandth of a millimetre; yet the acceleration and therefore the force exerted are very great, the acceleration being of the order of 100,000 times that of gravity.

The penetration into the body is several inches, the half-value depth being 3.7 centimetres at a frequency of 800 kilocycles.

The effects on the body are threefold. (i) The major effect is the production of heat; but the distribution is unique, the heat being concentrated at tissue interfaces and fascial interplanes. (ii) Studies with tagged chlorine ions indicate an increased permeability through the tissues. (iii) The well-marked spasmolytic and analgesic effect may be due to selective heating of perineural tissues.

In a review of my last 300 patients treated with ultrasonics, 150 were selected for study. Cases rejected include doubtful cases, and all cases in which ultrasonic therapy was combined with other methods of heat therapy, such as infra-red and short-wave therapy. In all cases a frequency of 800 kilocycles was used, with moving head technique. Dosage ranged from 0.8 watt up to two watts per square centimetre of the sound head, and the duration from four to 12 minutes.

It should be made clear that in this series treatment has been directed to local conditions only, and there has been no sounding of neural centres. It is realized that the question of neural sounding in the treatment of distal lesions is of importance, but this question has not been studied in this series.

Table I is a dissection of the 150 cases studied.

TABLE I.

Diagnosis.	Total Number of Cases.	Success.	Success after Failure with Other Methods.	Failure.
Tennis elbow	11	2	—	9
Painful heel	7	5	—	2
Dupuytren's contracture ..	2	(Doubtful, partial)	—	—
Post-herpetic neuralgia ..	3	1	—	2
Post-traumatic joint stiffness	3	—	—	3
Subdeltoid bursitis with calcification	3	—	—	3
Subdeltoid bursitis without calcification	1	—	—	1
Fibrositis of the lower part of the back	7	3	1	4
Cervical spondylitis	12	3	2	9
Osteoarthritis of the knees and hips	13	2	—	11
Muscle strains	13	4	1	9
Ligament sprains	24	19	—	5
Tendinitis of the shoulder	20	6	2	14
Tendinitis of the tendo Achillis	8	5	1	1
Tenosynovitis of the wrist and hand	10	7	—	3
Cervical fibrositis with neuralgia	14	11	4	3
Painful post-traumatic scars	2	2	—	—

It will be noted that osteoarthritis did not yield favourable results; the only two successful cases were those in which treatment was directed to an associated localized soft-tissue lesion. Patients with sprained ligaments generally did well, and of particular interest is the fact that five of these had sprains of spinal ligaments, and all did well. The results in tennis elbow are poor; but this fortunately is a condition that usually responds to treatment with hydrocortisone and other methods.

¹ Read at a meeting of the Section of Rehabilitation and Physical Medicine, Australasian Medical Congress (R.M.A.), Tenth Session, Hobart, March 1 to 7, 1958.

Conclusion.

It is realized that this is a small series, and further, that assessment of results is difficult, particularly when many of the conditions treated are liable to spontaneous remission or cure at a variable rate; nevertheless, I have formed some idea of the relative efficacy of ultrasonics and other methods of physical therapy.

The conclusions drawn are as follows:

1. The results of treatment are erratic.
2. Despite this, ultrasonic therapy does at times succeed where other physical methods have failed.
3. Theoretical considerations lead me to regard ultrasonics as a form of heat treatment, in which the heat is concentrated at fascial interplanes.
4. This is supported by the fact that the results were best in the treatment of tendinitis, tenosynovitis and ligament sprains.
5. Arthritis, in my experience, is not relieved unless treatment is directed to some localized periarticular soft-tissue lesion.
6. The outstanding value of ultrasonics seems to be in the treatment of fibrositis of the neck and shoulders associated with cervico-brachial neuralgia. This may be due to selective heating of perineural tissues.
7. Patients who respond show improvement early—usually after four or six treatments.
8. Because of the erratic results, I tend to keep this method for the treatment of patients who are not responding to other physical methods, or to use it for short-term trial only. However, I do on many occasions combine ultrasonics with other forms of heat therapy, and have found this most useful. Such cases are, of course, of little value in evaluating the efficacy of ultrasonics, and have been omitted from this series.

Acknowledgement.

I wish to thank Dr. Frank May for access to his records as well as my own.

Reviews.

Physical Dynamics of Character Structure: Bodily Form and Movement in Analytic Therapy. By Alexander Lowen, M.D. 1958. New York and London: Grune and Stratton. 8½" x 5½", pp. 368. Price not stated.

This book by Alexander Lowen contains numerous statements that are inadequately supported by evidence. One such opinion is that the human neck and waist correspond to the segmental junctions of worms. It is to be hoped that it stimulates interest in observing somatic accompaniments of psychological behaviour.

Textbook of Gynecology. By John I. Brewer, B.S., M.D., Ph.D.; Second Edition; 1958. Baltimore: The Williams and Wilkins Company. Sydney: Angus and Robertson, Limited. 9" x 6", pp. 758, with 204 illustrations. Price: £8 5s.

LIKE its predecessor of 1950, this book is divided into two parts, although the order appears to have been reversed. Part I dealing broadly with symptoms and pelvic findings and Part II with the common major gynecological entities. Part I has been further subdivided into three sections, each pertaining to one of the three major episodes of a woman's life—namely, childhood, maturity and the post-climacteric period. However, although in this second edition the sequence of the presentation has been slightly altered, there has been no major departure from the basic method of teaching of the subject of gynecology favoured by the author. In Part I the object is to encourage the student to approach the subject from the clinical aspect, starting with the patient, her signs and symptoms, and progressing on to the final diagnosis and its treatment. This conforms, of course, with the method used at the bedside in most teaching hospitals, and follows the general present-day trend towards clinical tuition and away from the set academic lectures. Part II contains the details of the gynecological entities set out in

the more usual didactic manner; but by this time it is hoped that the student has learnt to apply this knowledge to the management of patients. With this presentation there is of necessity a certain amount of repetition of the subject matter; but this, as the author rightly claims, is "good pedagogy".

The subject matter itself is presented in lucid fashion, the aim throughout being to teach students sound gynecological principles and to avoid confusing them with a lot of controversial unproved theories, and at the same time to be sufficiently comprehensive and practicable as to be "usable", to quote the author again. We believe that this aim has been achieved.

An improvement on a good first edition, the book has been brought right up to date. It is packed full of sound and valuable information, and if the undergraduate student can absorb it all, so much the better for examination purposes and for his preparation for subsequent entry into general medical practice. The family practitioner would also find it a very useful volume to have on his bookshelves as a reference.

Annual Epidemiological and Vital Statistics: 1955, 1958. Geneva: World Health Organization. 11" x 8½", pp. 672. Price: £3.

THE aim of these annual epidemiological and vital statistics reports is to enable comparisons to be made between countries. Basic information is given on the areas and the populations of the different political entities. Tables of deaths broken down simultaneously by age, sex and cause are given. For selected causes, mortality rates are given. The rather curious but common practice is followed of giving deaths per 100,000 with one place of decimals instead of the equivalent rate per million per annum without decimal—a great typographical nuisance. Among diseases for which interesting comparisons can readily be made are tuberculosis, some cancers, diabetes, cardio-vascular diseases and accidents. Australia has now displaced the United States for the leading position for accidents from vehicles. Australia ranks high also for diabetes; but of course this is compensated for by low death rates from other diseases such as tuberculosis. It is helpful to have much of this information to hand; but such compilations cannot replace the actual national registers, which must be consulted for finer details and for data extending back in time. However, there are still many insights into disease that can be obtained from international comparisons. The book is recommended for medical or public health libraries.

The Pharmacologic Principles of Medical Practice: A Text-book on Pharmacology and Therapeutics for Medical Students, Physicians, and the Members of the Professions Allied to Medicine. By John C. Krantz, Jr., and C. Jelliff Carr; Fourth Edition; 1958. Baltimore: The Williams and Wilkins Company. Sydney: Angus and Robertson, Limited. 9" x 5½", pp. 1316, with many illustrations. Price: £14 4s.

THIS the fourth edition of "Krantz and Carr" since 1949, is a tribute both to the well-merited popularity of the book and to the fruitful industry of the authors.

The general arrangement of subject matter remains unchanged, but two new chapters have been added dealing with the use of drugs in the treatment of mental illnesses, and with the local use of drugs in the eye, ear, nose and throat. Most of the older chapters have been reviewed and expanded in consonance with newer concepts as to the nature of disease, and with the possible means and agents for its therapeutic subjugation. Of these, some 140 newer ones receive consideration.

The antihistaminics, hitherto included in the section devoted to the responses of the autonomic nervous system to drugs, receive fuller treatment in a new chapter on pharmacological agents in allergic diseases. A few paragraphs on the place of the antihistaminics in the prophylaxis of the common cold make an interesting side issue.

Naturally, the new set of tools now in the hands of the physician—the ataractic drugs—receive due consideration, with an exhortation for discrimination in their use. In this respect the philosophical views of the authors merit quotation:

Let us not delude ourselves that this foray with the tranquillizing drugs has checked the mighty forces which stir the troubled waters of mental illness. They have only given us an oil to quell them. One question the wisdom of drug induced tranquillization in many individuals, where drive and ambition coupled with associated tension are the dynamic forces of their very existence. Their peace of mind is not tranquillity but achievement.

In view of the increasing use of potent drugs in various media for application as nasal drops and aerosols, it is refreshing to read the summary in the newly added chapter on the local use of drugs in the eye, ear, nose, and throat:

Preparations for local application to the nasal cavities should be aqueous, isotonic, slightly acid with a high buffer capacity, and should not impair ciliary activity. The inclusion of bacteriostatic agents is of questionable value except in long-standing chronic infections.

The authors, in adhering to their established policy of using well known proprietary names for many drugs in preference to their official or approved names, rather than perpetuate a confusing practice. In view of the fact that there is no limit to the possible number of proprietary names, we cannot believe this policy to be a sound one in a didactic treatise. However, this book is, as in previous editions, a very lucid and satisfying presentation of pharmacological principles applicable to all aspects of medical practice, and as such merits a place in every well equipped library.

Books Received.

[The mention of a book in this column does not imply that no review will appear in a subsequent issue.]

"Cerebral Vascular Diseases", Transactions of the Second Conference held under the Auspices of the American Heart Association, Princeton, New Jersey, January 16-18, 1957. Chairman, Irving S. Wright; Editor, Clark H. Millikan. 1958. New York and London: Grune and Stratton, Incorporated. 10" x 6½", pp. 232, with illustrations. Price: \$4.00.

The title is self-explanatory.

Sixth International Congresses on Tropical Medicine and Malaria: "Abstracts of the Papers"; 1958. Lisbon: Instituto de Medicina Tropical. 9½" x 7", pp. 246. Price not stated.

The congresses were held in Lisbon from September 5 to 13, 1958.

"Tumors and Tumorlike Conditions of the Bones and Joints", by Henry L. Jaffe, M.D.; 1958. Philadelphia: Lea and Febiger. Sydney: Angus and Robertson, Limited. 10" x 6½", pp. 632, with 194 illustrations. Price: £10 3s. 6d.

"The clinical, roentgenographic, and pathologic findings pertaining to the various lesions are discussed and correlated."

"Side Effects of Drugs: Untoward Effects of Drugs as Reported in the Medical Literature of the World during the Period 1956-1957", compiled by L. Meyler, M.D.; 1958. Amsterdam, New York: The Excerpta Medica Foundation. 9½" x 6½", pp. 194. Price not stated.

A systematic survey.

"Growing Up in a Changing World"; 1958. London: World Federation for Mental Health. 8½" x 6", pp. 238. Price: 15s. (paper covers).

Papers presented at the tenth annual meeting of the World Federation for Mental Health, Copenhagen, August, 1957.

"Pharmacological and Chemical Synonyms: A Collection of More than 8000 Names of Drugs etc. from the Medical Literature of the World", compiled by E. E. J. Marler, M.D., M.Sc., Ph.D.; Second Edition; 1958. Amsterdam, New York: Excerpta Medica Foundation. 9½" x 6½", pp. 176. Price not stated.

"Clinical Radiology of Acute Abdominal Disorders", by Bernard S. Epstein, M.D.; 1958. Philadelphia: Lea and Febiger. Sydney: Angus and Robertson, Limited. 10" x 6½", pp. 352, with 224 figures and 406 illustrations. Price: £8 5s.

The title is self-explanatory.

"Bailey's Textbook of Histology", revised by Wilfred M. Copenhaver, Ph.D. (Editor) and Dorothy D. Johnson, Ph.D.; Fourteenth Edition; 1958. Baltimore: The Williams and Wilkins Company. Sydney: Angus and Robertson, Limited. 9½" x 6½", pp. 648, with 478 illustrations. Price: £8 1s.

The revisers are the Professor of Anatomy and Assistant Professor of Anatomy, respectively, at the College of Physicians and Surgeons, Columbia University.

"Injuries and Surgical Diseases of the Ischium", by Henry Mutch, M.D.; 1958. New York: A. Hoeber-Harper Book. 10" x 6½", pp. 176, with 106 illustrations. Price: \$10.50.

The author is Attending Orthopedic Surgeon, Hospital for Joint Diseases, New York.

"Diagnostic Anatomy", by Weston D. Gardner, M.D.; 1958. St. Louis: The C. V. Mosby Company. Melbourne: W. Ramsay (Surgical), Limited. 9½" x 6½", pp. 276. Price: £6 10s.

Anatomy for the practising doctor, especially as it is related to physical examination of the patient.

"Etiology and Treatment of Leukemia: Proceedings of the First Louisiana Cancer Conference", edited by Walter J. Burdette, Ph.D., M.D., F.A.C.S.; 1958. St. Louis: The C. V. Mosby Company. Melbourne: W. Ramsay (Surgical), Limited. 9½" x 6½", pp. 167, with many illustrations. Price: £3 4s.

The proceedings of a conference sponsored by the Louisiana Division of the American Cancer Society.

"New Biology", edited by M. L. Johnson, Michael Abercrombie and G. E. Foss; 1958. Mitcham, Victoria: Penguin Books, No. 27. 7" x 4½", pp. 128, with illustrations. Price: 4s.

Contains seven articles on recent work in biology presented for the general reader.

"World Health", by Fraser Brockington; 1958. Mitcham, Victoria: Penguin Books. 7" x 4½", pp. 416, with illustrations. Price: 7s. 6d.

This book explains the world-wide problems of food, population, disease, and physical and social welfare which the World Health Organization is seeking to solve.

"Shark Attack", by V. M. Copleston; 1958. Sydney: Angus and Robertson, Limited. 8½" x 5½", pp. 284, with many illustrations. Price: 22s. 6d.

The first book ever published on shark attacks. The author is a Sydney surgeon.

"Pathology for Students of Dentistry", by George I. Montgomery, T.D., M.D., Ph.D., F.R.S.E., F.R.F.P.S.(G.), F.R.C.P.E.; Second Edition; 1958. Edinburgh and London: E. and S. Livingstone, Limited. 8½" x 5", pp. 316, with 134 illustrations. Price: 40s. (English).

The first edition appeared in 1953. This edition is fully revised.

"Peripheral Nerve Injuries", by Ruth E. M. Bowden, D.Sc., M.B., B.S., L.R.C.P., M.R.C.S.; 1958. London: H. K. Lewis and Company, Limited. 7½" x 4½", pp. 68, with 30 illustrations. Price: 3s. 6d. (English).

An introduction to methods of diagnosis and treatment of nerve injuries for medical students, housemen and physiotherapists.

"Clinical Obstetrics and Gynecology", Volume I, Number 3. "Symposium on Special Diagnostic Aids", edited by C. Paul Hodgkinson, M.D.; "Symposium on Abnormal Uterine Bleeding", edited by John I. Brewer, M.D. September, 1958. New York: Paul B. Hoeber, Incorporated. 9½" x 8", pp. 303, with illustrations. Price not stated.

The third number of an essentially practical quarterly publication.

"Angiocardiographic Observations in Mitral Disease: With Special Reference to Volume Variations in the Left Atrium". Acta Radiologica, Supplement 158, by Hakan Arvidsson; 1958. Stockholm: Acta Radiologica. 9½" x 7", pp. 124, with 39 illustrations. Price: Sw. Kr. 30.

An account of the methods and findings of a Swedish investigation.

"Percutaneous Selective Angiography of the Coeliac Artery". Acta Radiologica, Supplement 159, by Per Odman; 1958. Stockholm: Acta Radiologica. 9½" x 7", pp. 168, with 49 illustrations and 14 tables. Price: Sw. Kr. 25.

Some specialized radiological research from Sweden.

"Baby and Child Care", by Dr. Benjamin Spock; Second Edition; 1958. London: The Bodley Head. Melbourne: William Heinemann, Limited. 7½" x 4½", pp. 608, with illustrations. Price: 18s. 9d.

The first edition was published in England in 1955. This is a new and enlarged edition.

The Medical Journal of Australia

SATURDAY, FEBRUARY 14, 1959.

PENICILLIN'S DARK SHADOW.

PENICILLIN, when it was introduced during the second World War, seemed to belong to the same exclusive company as the Elixir of Life and the Philosopher's Stone. It had the added distinction of having been found and made available. Here, it seemed, was the wonder drug long sought, Ehrlich's *therapia magna sterilisans*, fatal to pathogenic organisms, harmless to human cells. Of its usefulness the succeeding years have left us in no doubt. It has saved countless lives, has reduced morbidity on a grand scale, and is still probably the most popular and most useful of the antibiotics. In mass campaigns, such as those conducted by the World Health Organization against the treponematoses, it has particularly come into its own. On the other hand, we have reluctantly had to give up the idea that it is a harmless panacea. It is not harmless and may not be used indiscriminately without fear of consequences. It might have been thought that everyone knew this, but apparently it has not been fully realized, if we may judge from the general reaction to the death of a baby a short time ago in a Sydney suburb from anaphylaxis following the injection of penicillin. Although one can see no way in which this particular tragedy might have been averted, and no blame for it attaches to anyone, it offers no grounds for surprise. The occurrence of sensitivity reactions to penicillin, especially in the skin, has been recognized since not long after the introduction of the antibiotic, and attention was drawn to a series of fatal cases of anaphylactic shock from penicillin in these columns five years ago.¹ In the following year in a leading article² on "Penicillin Reactions: A Warning" the comment was made: "It is necessary to shout from the housetops the change that has come over the scene since this seemingly harmless miracle drug was introduced in 1943." We then quoted the statement of two American investigators that penicillin headed the list of medicinal agents in the frequency, diversity and severity of the sensitivities which it induced. In current experience it had replaced foreign sera as the commonest cause of fatal anaphylactic shock. A search of the literature at that stage revealed records of fifteen deaths from anaphylactic shock following

penicillin injections in the previous year and a half. By 1957 it was estimated that a total of one thousand deaths from anaphylaxis from penicillin had occurred in the United States alone.

What must, of course, be constantly remembered is that the dangerous reactions to penicillin are comparatively rare in relation to the total amount of penicillin used. Exact comparative figures on this are hard to obtain, but the question is discussed in a comprehensive paper on untoward penicillin reactions by T. Guthe, O. Idsøe and R. R. Willcox.³ It appears that in 1955 the world production of penicillin exceeded five hundred tons. In the period 1954-1956 an average of three hundred tons of penicillin was provided annually in the United States alone; two hundred tons of this were used in human medicine. In Denmark, where they keep careful statistics, the incidence of fatal anaphylactic reactions from penicillin in recent years has been about 0.3 per million injections. Corresponding figures for the United States would appear to be of the same order, although it is probable that the true figures for clinical practice are somewhat higher than this. Nevertheless, the figures are still very small in relation to the total consumption of this valuable drug. In view of the use of penicillin for mass prophylaxis, figures quoted by Guthe and his colleagues from some of these campaigns are of interest. In Thailand during 1950-1955 only 20 cases of anaphylaxis (one fatal) were reported from 938,299 patients treated for yaws and 196,482 treated for syphilis; this is a low incidence, but it was presumably influenced by the fact that many of the patients were treated with single injections. In Taiwan during 1953-1955 anaphylactic reactions occurred in 21 of 15,574 patients treated with penicillin for venereal diseases; none were fatal. There are no Australian figures available to our knowledge, though it is understood that some steps are being undertaken to obtain them. They will be interesting and useful to have.

The two sides of this picture of penicillin and anaphylaxis have been presented deliberately, as the question needs to be looked at in this way and in that. On total figures the danger of a fatal reaction to penicillin is very small and should not be allowed to influence the decision to use penicillin where it is really indicated. Nevertheless, when death does occur, it is no consolation to know that it is a rare occurrence, especially if in retrospect it was apparently avoidable. How may such tragedies be avoided? Probably some are unavoidable, but precautionary measures are in broad terms three. The first, which need not be laboured, is that penicillin should not be administered without a clear indication. The second is that the possibility of sensitivity should be looked for in every case and the injection given with care. If a careful history, following the usual lines for allergic responses, suggests sensitivity, skin tests may be tried, but their value is limited; if there is doubt, another suitable drug should be selected. The injection should be given slowly and deeply into muscle, the patient should be watched carefully, and if possible he should remain in the consulting room for fifteen minutes. In doubtful cases it is suggested that an injection may be split, a small dose being given, and the patient watched for reaction before

¹ Med. J. Aust., 1953, 1: 711 (May 16).

² Med. J. Aust., 1954, 1: 751.

³ Bull. Wild Hlth Org., 1958, 19: 427.

the rest is given. Guthe and his colleagues draw attention to the fact that even minute amounts of penicillin can evoke a reaction, and suggest that needles, syringes and sterilizing equipment used in association with the administration of penicillin should be reserved for that purpose. The third measure is prompt treatment. This follows routine lines for the treatment of shock conditions, hopes of success being in direct proportion to preparedness for such an emergency.

The patient and the non-medical public can be taken into our confidence in this matter with advantage to everyone. Undoubtedly some unnecessary penicillin treatment is given to satisfy the importunate patient. The public needs to know that this is unwise, and the doctor needs to stand firm on his own judgement. On the other hand the dangers of penicillin should not be allowed to assume exaggerated proportions in the public mind. Penicillin is a most valuable drug which will continue to save lives and relieve suffering in a big way if wisely used. The risks associated with its use are real, but no greater than those that accompany many of the normal activities of modern life.

Current Comment.

JOHN WESLEY AMONG THE PHYSICIANS.

It may come as a surprise to many that the famous preacher and evangelist, John Wesley, has been raised to a posthumous place of honour among physicians of the eighteenth century. In an interesting study of the medical profession of that period, Dr. A. Wesley Hill¹ has given a number of sound reasons for the great preacher's uncerecermonious and brazen encroachment upon the sacred preserves of the Royal College of Physicians; and that at a time when he must have been fully occupied in founding a new religion and in facing strenuous journeys on horseback to hold revivalist meetings throughout the length and breadth of the United Kingdom. Like many a cleric in his day, Wesley managed to combine with his classical scholarship as a Fellow of Lincoln College, Oxford, a thorough study of all the latest medical literature; and being endowed with intellectual powers and abilities equal to physicians holding the highest qualifications, in his later capacity as a humble pastor he sought to employ rational and common-sense methods of healing in order to bring much-needed succour to the warped bodies, minds and souls of the poverty-stricken workers of his own country.

In the course of his narrative, Dr. Hill points out convincingly that there was a real need for Wesley's professional and spiritual ministrations among the rural and industrial population of England. Ignorant charlatans were everywhere taking a mean advantage of their innocent victims. The availability of skilled medical attention was limited by a paucity of practitioners and the consistently low standards of qualification required to satisfy the examining bodies. In many cases of serious illness the services of the physician were restricted to a lucrative consultation with the attending apothecary in one of London's famous coffee houses, when the appropriate treatment was discussed and the absent patient provided with a prescription displaying an impressive assortment of expensive drugs for which he was quite unable to pay.

Instead of the dangerous phlebotomies, polypharmacy, clysters and emetics, Wesley prescribed for his patients simple, inexpensive and useful drugs, suggested homely remedies and gave sound advice; at the same time he

relieved them of anxiety and financial hardship by refusing to accept any form of reward for his services. Unlike one distinguished physician of the day, who remarked to a junior colleague, "I'll give you an infallible recipe for success in practice: use all mankind ill", the founder of Methodism was a true Christian in his approach to such matters. His reputation is still further enhanced by the account of his medical activities so reliably and authoritatively presented in this well written piece of historical research. Dr. Hill's small book may serve to remind all of us that there are still people in need of sympathetic understanding and treatment for the ills of body, mind and spirit.

ABSORPTION OF ORALLY ADMINISTERED VITAMIN B₁₂ IN PERNICIOUS ANÆMIA.

SINCE Castle put forward in 1929 the hypothesis that an intrinsic factor, contained in normal gastric juice but not in the gastric juice of persons suffering from pernicious anæmia, and an external factor contained in some foods were necessary to restore the blood picture in pernicious anæmia, a great deal of research has been done on the subject, particularly since the extrinsic factor has been isolated as vitamin B₁₂. It was early shown that small doses of vitamin B₁₂ given orally had little or no effect on the blood picture, and indeed were not appreciably absorbed; but were if some normal human gastric juice or crude extract of animal pyloric mucosa or, more recently, purified extracts were given at the same time. Much labour has been spent in the search for the intrinsic factor. In 1953 J. G. Heathcote and F. S. Mooney² advanced a new hypothesis that the orally active form of vitamin B₁₂ is a peptide complex and that the peptide can be of plant origin. This paper was discussed at length in these columns in the issue of July 19, 1958. Heathcote and Mooney presented what seemed to be a very strong case, but several workers, including W. B. Castle,³ C. Green and A. L. Latner,⁴ have since criticized their conclusions on the ground that the hematological responses produced by the vitamin B₁₂-peptide complex might have occurred with pure vitamin B₁₂ in similar doses.

Isotope studies with vitamin B₁₂ containing radioactive cobalt suggest that the vitamin B₁₂ is absorbed by more than one mechanism.⁵ J. N. M. Chalmers and N. K. Shinton⁶ have described an attempt to assess clinically, hematologically and by serum vitamin B₁₂ estimations, the effects of giving daily oral doses of 20 to 500 µg. of vitamin B₁₂ alone for periods varying from 15 days to 50 months. Twenty-two patients with pernicious anæmia, in relapse, were studied. All but three of these patients showed hematological improvement in 15 days when given the vitamin alone in doses of 20 to 500 µg. daily. One other showed a delayed response. Hematological and clinical remission can occur before the serum vitamin B₁₂ level reaches the normal range. The long-term trials show that serum vitamin B₁₂ and hematological values can be held in patients who cooperate by taking vitamin B₁₂ alone by mouth. Chalmers and Shinton consider that at least 100 µg. daily should be given, and this could be increased with advantage. These observations add weight to the view that the use of extraneous sources of intrinsic factor is not essential for absorption of orally administered vitamin B₁₂ by patients with pernicious anæmia.

E. H. Hemsted and J. Mills⁷ have carried out an investigation to determine whether administration of a daily dose by mouth of 100 µg. of vitamin B₁₂ by itself or a monthly dose by intramuscular injection of 100 µg. of vitamin B₁₂

¹ *Lancet*, 1958, 1: 952 (May 10).

² *Ibid.*, 1958, 2: 270 (August 2).

³ *Ibid.*, 1958, 2: 156 (July 19).

⁴ *Ibid.*, 1958, 1: 1077 (May 17).

⁵ *Ibid.*, 1958, 1: 1374 (June 28).

⁶ *Ibid.*, 1958, 2: 1298 (December 20).

⁷ *Ibid.*, 1958, 2: 1302 (December 20).

¹ "John Wesley Among the Physicians: A Study of Eighteenth Century Medicine", by A. Wesley Hill, B.A., M.B., B.Ch., 1958. London: The Epworth Press. 7½ x 4½", pp. 146. Price: 10s. 6d. (English).

gave the better results in the treatment of pernicious anemia. Over a period of two years 71 patients receiving the daily oral dose were maintained at least as well as 34 patients receiving a monthly injection. These investigations still leave one in doubt whether or not there is an intrinsic factor, but they seem to demonstrate that with a sufficient dose of vitamin B₁₂, the externally supplied intrinsic factor is not necessary.

M. Schwartz, P. Lous and E. Meulengracht¹ have studied defective absorption of vitamin B₁₂ induced by prolonged oral treatment. Crude preparations of hog pyloric mucosa with vitamin B₁₂ can maintain unlimited remission in almost all cases, yet the new preparations for oral use ("Bendogen", "Bifakton", "Cycoplex") and purified hog pyloric mucosa are stated to have proved unsuccessful in a number of cases. Previously untreated sufferers from pernicious anemia absorbed very little vitamin B₁₂ when given no source of intrinsic factor, but absorbed normal amounts when given hog pyloric mucosa. Patients who had been treated solely with preparations of vitamin B₁₂ plus hog pyloric mucosa for long periods (three months to four years) mostly showed very little or no absorption with this treatment. The absorption was measured by the excretion of ⁵⁷Co vitamin B₁₂ in the urine. These patients were treated with "Cycoplex", which contains per maintenance dose 100 mg. of purified hog pyloric mucosa plus 10 µg. of vitamin B₁₂. Blockage of absorption of vitamin B₁₂ is then common in patients with pernicious anemia who have been treated for long periods with oral preparations of vitamin B₁₂ plus pyloric mucosa. This blockage is a new phenomenon, associated with a new type of oral preparation containing relatively small amounts of pyloric mucosa (more or less purified) in proportion to the dose of vitamin B₁₂. Schwartz, Lous and Meulengracht consider that the blockage of absorption is an immunity phenomenon associated with hog mucosa. Excepting in the composition of "Cycoplex", they give no figures for the amount of vitamin B₁₂ administered to the patients.

DEAFNESS FOLLOWING MATERNAL RUBELLA.

The subject of congenital defects following maternal rubella is one on which much has been written, and one which should be specially familiar to Australian practitioners, as much of the pioneer work in this subject was done in Australia. It is customary to refer to the papers by Gregg and by Swan, which first drew attention to the association of congenital defects in children with a history of maternal rubella in the first trimester of pregnancy, but in the present context we should also remember the paper by D. G. Carruthers² in which he listed 13 cases of congenital deaf-mutism following maternal rubella and described the changes in the microscopic structure of the inner ear found at autopsy in one affected infant. However, much uncertainty existed as to the frequency of these defects after maternal rubella till prospective studies were undertaken, and the results of these are only now coming to hand. In a recent article by A. D. M. Jackson and L. Fisch,³ the results of an investigation on hearing defects in children whose mothers had suffered from rubella during the first 18 weeks of pregnancy are discussed, and attention is drawn to the frequency of various grades of congenital deafness found under these circumstances. This investigation was done as part of a prospective inquiry into the effects of virus infections during pregnancy, carried out by the Ministry of Health in England. A group of 57 children were studied, whose mothers had had rubella during pregnancy, and who at the time of this investigation were aged between three and five years. These were compared with 57 children whose mothers had had no infection during pregnancy. Jackson and Fisch believe that theirs is the first investi-

tion of a group of children from a prospective series to include detailed hearing tests with audiograms. They found an incidence of congenital deafness of 30% among the children whose mothers had had rubella during the first 16 weeks of pregnancy; in 30% of these children the deafness was unilateral, and in over 60% it had been previously undetected, indicating the importance of detailed hearing tests in the diagnosis of rubella deafness in young children. Jackson and Fisch emphasize that to obtain a reliable estimate of the risk of deafness from maternal rubella, the children must be followed for at least four years. A corollary to this is that children whose mothers are known to have had rubella during the first 16 weeks of pregnancy, even if their hearing appears to be normal, should be submitted to audiometry tests as soon as they are old enough for this to be done. In this way a serious defect will be discovered before it has had time to hamper the child's development and education.

LIPIDS OF THE ARTERIAL WALL IN ATHEROSCLEROSIS.

In 1956 H. M. Sinclair¹ put forward the idea that the development of atherosclerosis may be related to a deficiency of what are called the essential fatty acids (linoleic, linolenic and arachidonic acids) in the diet. Little evidence was given that such a deficiency ever exists in the diet of man. He considered that such a deficiency would lead to a reduction in the degree of unsaturation of the fatty acids in the cholesterol esters of the body. As a consequence, cholesterol esters of the saturated fatty acids would increase in amount and be laid down in the arterial wall, so causing atheroma. This idea has been accepted by a number of writers since, and it has been widely recommended that the saturated animal fats in the diet be largely replaced by vegetable fats, such as maize oil, rich in the essential unsaturated fatty acids.

C. J. F. Böttcher, J. G. Keppler, C. C. ter-Haar Romeny-Wachter, E. B. van Houte and C. M. van Gent² have undertaken a detailed analysis of the lipids extracted from single human aortas in different stages of atherosclerosis. The whole of the intima and media rather than isolated atheromatous plaques was examined. Each aorta was assigned to one of four stages of atherosclerosis: 0—no atheroma visible to the naked eye; I—distinct plaques of not more than 3 mm. diameter; II—distinct or confluent plaques of more than 3 mm. diameter; III—as for II but with visible necrosis or ulceration. The total lipids were extracted from the intima and as much media as could be stripped from the aorta, and separated by modern methods into phospholipids, free fatty acids, the fatty acid moieties of the phospholipids, glycerol esters and sterol esters. The separated fatty acids were methylated and the methyl esters separated by gas chromatography. Large differences were found in the lipid analyses of the different aortas classed as being in the same stage of atherosclerosis. The percentage of lipids and also the cholesterol content of the lipids increased with the severity of the atherosclerosis. In all stages the phospholipids contained mainly saturated fatty acids, but there was no increase in the saturated fatty acid as the degree of atherosclerosis increased; indeed, the percentage tended to decrease. In the glycerol-ester fraction the percentage of saturated fatty acids bore no significant relation to the degree of atherosclerosis. In the sterol esters the unsaturated fatty acids predominated, and this predominance seemed to increase with atherosclerosis.

These results do not in any way support the hypothesis of Sinclair and others that deposition of cholesterol esters of saturated fatty acids in the arterial wall is a characteristic feature of atherosclerosis. Indeed, it was found that the percentage of saturated fatty acid in the sterol esters tended to fall with increasing atherosclerosis.

¹ *Lancet*, 1956, 2: 1260 (December 6).

² *Mem. J. Adv.*, 1945, 1: 315 (March 31).

³ *Lancet*, 1958, 2: 1241 (December 13).

¹ *Lancet*, 1956, 1: 943.

² *Lancet*, 1958, 2: 1207 (December 6).

Abstracts from Medical Literature.

DERMATOLOGY.

Pyogenic Granuloma.

L. ROWE (*A.M.A. Arch. Derm.*, September, 1958) discusses pyogenic granuloma. He states that it occurs at all ages. Preferred sites are hands, feet, lips, face, upper part of the trunk and umbilical region on the skin, and the buccal, nasal, laryngeal, vaginal and cervical mucous membranes. These granulomata present as vascular tumours, bright red, pedunculated or sessile, with smooth or frambesiform surface. They are firm, do not compress easily, and are essentially non-painful. Ready bleeding and suppuration are characteristic, and accompanying lymphangitis, lymphadenitis and fever may be found. The lesions persist with no tendency to self-healing. Pyogenic granuloma is a benign tumour occurring in skin and mucous membranes. Not infrequently it takes on a bizarre clinical appearance suggestive of a malignant condition. On the other hand a small non-aggressive innocent-looking vascular tumour that strongly resembles a pyogenic granuloma clinically may be one of a fairly large number of other skin disorders or tumours, some benign, some malignant. Therefore with any lesion that resembles pyogenic granuloma the diagnosis should be confirmed by biopsy.

Acute Peptic Ulcer After Triamcinolone Therapy.

C. H. BROWN AND J. R. HASERICK (*A.M.A. Arch. Derm.*, September, 1958) report the case of patient who developed an acute duodenal ulcer after he had taken small doses of triamcinolone for two and a half weeks, also two other cases of peptic ulcer associated with triamcinolone therapy. The patient in their first case was being treated for psoriasis and had taken 16 mg. daily for two weeks and then 12 mg. daily. The authors state that this suggests that the same precautions concerning peptic ulcer should be taken with triamcinolone as with other steroids.

Urticaria Papulosa.

R. M. BOLAM (*Brit. J. Derm.*, October, 1958) states that papular urticaria is due to insect infestation in an allergic subject in the majority of cases. Forty cases were investigated and parasites were found in 27. The species of parasites found were: cat fleas, 20 cases; hen fleas, two cases; pigeon fleas, one case; house martin fleas, one case; human fleas, one case; undetermined fleas, one case; dog lice, one case. Clinical improvement occurred after control measures were instituted in 19 out of these 27 cases.

Cutaneous Reactions Due to Sulphamethoxypyridazine.

D. G. LINDSAY *et alii* (*A.M.A. Arch. Derm.*, September, 1958) describe the cutaneous reactions caused by sulphamethoxypyridazine. They state that of 55 hospital in-patients and 30 out-patients

receiving orally administered sulphamethoxypyridazine therapy for urinary tract infections, 11% of the former and 13% of the latter developed untoward reactions, in most cases dermatitis. One case of a very severe reaction was reported. The data presented seem to indicate a relationship to dosage in some cases but not in all. If the daily dosage is 0.5 gramme or less, a lower incidence of reactions may be expected. Previous administration of sulphonamides does not appear to influence the incidence of untoward reactions.

Traction Alopecia.

A. H. SLEPYAN (*A.M.A. Arch. Derm.*, September, 1958) states that many of the more recent writings devoted to the care of the scalp and hair of the female warn of the necessity of avoiding prolonged traction on any portion of the scalp. Repeated pulling of the hair has been shown to cause inflammation with its resultant consequences. The author has observed 24 patients with baldness due to the wearing of a pony tail. Of these, two showed evidence of permanent baldness; the others regrew their hair once the traction of the pony tail was reduced. It is suggested that the name traction alopecia be used in describing those conditions which hitherto have been designated as alopecia liniaris frontalis, that is traumatic marginal alopecia in which persistent traction with its resultant inflammation and the sequelae of inflammation can be established.

Contact Dermatitis Due to Philodendron.

S. AYRES, junior, AND S. AYRES III (*A.M.A. Arch. Derm.*, September, 1958) state that the current vogue involving the use of living plants for interior decoration and for patios, especially in warmer areas, has resulted in the popularization of various species of *Philodendron*. During the past few years the authors have observed at least 12 patients who have developed contact dermatitis from exposure to several species of *Philodendron*. The incidence of dermatitis from these plants is not great. The possibility of such a source should be considered in any dermatitis, especially if it involves the hands and arms, suggesting an external origin.

UROLOGY.

Interstitial Cystitis.

E. H. BURFORD AND C. E. BURFORD (*J. Urol. (Baltimore)*, June, 1958) present a report on 187 cases of interstitial cystitis. They state that the final solution of the problem of this disease (also called Hunner's ulcer) has not yet been found. Fortunately it occurs relatively infrequently, but for the patient it is a real and constant torment. The aetiology has not been established. In the present series of patients, studied over periods varying from a few months to 36 years, 94% were females, and only 6% were males. The outstanding characteristics are symptoms associated with small bladder capacity, its occurrence nearly always in a female, and a sterile urine.

The increased frequency is nocturnal as well as diurnal. The suprapubic pain is relieved by emptying the bladder. All sorts of methods of treatment have been tried up to partial, or even total, cystectomy. The latter is too radical for a non-malignant disease, while the former does not ensure against the appearance of a new area of interstitial cystitis in the unremoved portion of the bladder wall. Nerve block, as well as injection of various substances into the bladder wall, has been tried, but success is variable. The method favoured by the authors is the time-tested one of over-distension, but this is preceded by instilling 15 ml. of a strong local anaesthetic (5% cocaine hydrochloride) into the empty bladder for three to five minutes. This is followed by over-distension to the limit of tolerance. This is followed in turn by the instillation of a little 2% silver nitrate into the posterior part of the urethra, to which is added 30 ml. of 1:1000 silver nitrate solution and 90 to 120 ml. of water. This mixture is held for about two minutes, then it is flushed out with sterile water. The patient's journey home is more comfortable if five to 10 ml. of the local anaesthetic are instilled into the bladder before removing the catheter. The patient is asked to retain this for 10 to 15 minutes. Endoscopic electro-coagulation of the affected area is reserved for those patients who are refractory; this is done under general anaesthesia, and a low intensity current is used. As for drug therapy, "Banthine" is a useful adjuvant in about 50% of cases. The average interval between such treatments is six weeks. Many patients have to be tenacious and keep up treatment over many years, securing relief from their complaint rather than cure.

C. H. KINDER AND R. C. SMITH (*Brit. J. Urol.*, September, 1958) describe Hunner's ulcer (chronic interstitial cystitis) as a rare condition. Only 27 definite cases were seen at the St. Peter's and St. Paul's Hospitals, London, in the past 10 years, out of 17,000 new patients. The average age was 53 years, and all but two were women. The symptoms common to the whole group were frequency and pain when the bladder was full, and these were temporarily relieved by hydrostatic dilatation. The urine was always sterile. The cystoscopic appearances, though insignificant in comparison with the symptoms, were specific. Cystoscopy must be done under general anaesthesia and the bladder must be distended. It is only then that the relative rigidity of the affected areas, with petechiae, bleeding points and splitting of the mucosa, is seen as the bladder fills and empties. Biopsy and bimanual examination under full general anaesthesia may be necessary to exclude carcinoma. The symptoms of any chronic infection of the bladder may resemble those of Hunner's ulcer, but with the latter infection is not present. Treatment is unsatisfactory and cure is extremely rare. Of all the conservative methods, hydrostatic dilatation at varying intervals is most likely to give relief, though the symptoms always recur. Operative measures all have grave disadvantages, and should be used only as a last resort. Uretero-sigmoidostomy was performed in

10 cases in this series, with two deaths, but the surviving patients obtained complete relief. Other methods are not so certain. The etiology is still unknown. It is not likely to be infective, but may be due to hormonal influences and may be partly psychosomatic. The pathology is quite non-specific. Inflammatory organization leads to intramural fibrosis, and a bladder incapable of relaxing. The contraction causes the marked frequency and the pain is probably due to involvement of nerve endings in the inflammatory tissue. Actual ulceration, when it occurs, is probably secondary to stretching and thinning of the mucosa overlying a zone of interstitial cystitis, and is not likely to be the precursor of the inflammatory changes.

Carcinoma of the Bladder.

J. C. ANDERSON (*Brit. J. Urol.*, September, 1958) states that the cystoscopic appearance, and to some degree bimanual palpation, determine the choice of treatment in carcinoma of the bladder. Other factors are the age and physical condition of the patient, and the presence or absence of infection. The choice is governed by the desire to keep the ureters in the bladder as long as possible. The author regards a decision to divert the urine as an admission of failure. If the villi are fine and the base is narrow with no surrounding epithelial change, varicosity or sign of lymphatic obstruction, cystoscopic removal is chosen even if the lesions are multiple. Open operation is decided on if the growth has blunted fronds, a wide base, or if there are varicosities or a velvety creep from the base; also if it is in part or wholly solid, nodular or invasive, and is less than 3 to 4 cm. in diameter on the floor of the bladder, or 5 cm. elsewhere, and has not invaded the pelvic cellular tissue. In such cases, wide partial cystectomy is done. If the diameter of the growth is more than 4 cm. and it has entered the retrovesical tissues, then supervoltage X-ray treatment is indicated, and gives excellent results in many cases. When all these treatments fail, total cystectomy is necessary; it should be remembered that the posterior part of the urethra may be involved as well as the bladder. The author considers that after cystectomy it is better to create an ileal bladder, because the ureters are divided and anastomosed at a higher level where their blood supply is better. When radiotherapy is undertaken, the author aims at a dose of 5000r to 6000r whether it is by radon, radon and supervoltage therapy or supervoltage therapy alone.

Recurrent Renal Calculi and Hyperparathyroidism.

H. W. McINTOSH, J. A. BALFOUR AND M. H. DUFFY (*Brit. J. Urol.*, September, 1958) state that in recent years increasing attention has been paid to the diagnosis of hyperparathyroidism. The present study was stimulating by the fact that over a six-year period no case of hyperparathyroidism was diagnosed in their hospital in Vancouver. Accordingly, a group of 50 patients, all of whom have had recurrent renal calculi, were studied with particular reference to the possibility of their representing undiagnosed cases of hyperparathyroidism. Since they were in

an ex-servicemen's hospital, they were all males. The diagnosis of this disease in the absence of characteristic bone changes can present many difficulties. The authors found that the level of serum calcium, usually relied on, is of less value in diagnosis than the rate of urinary excretion of calcium and the handling of phosphate by the renal tubules. With the exception of a history of renal calculi, the clinical features in hyperparathyroidism are relatively unimportant, and the diagnosis depends primarily upon the interpretation of biochemical tests scrupulously carried out. The determination of hypercalciuria is a *sine qua non*. The authors state that no patient should be considered for operation on the parathyroid who has not exhibited an excretion of urinary calcium greater than the calcium intake when this is at a low level. In making these determinations it is important that the calcium intake be reduced; under ordinary conditions some of these patients with proved hyperparathyroidism had shown no elevation (or very little) of their serum calcium level and the diagnosis had therefore been overlooked. So far as the metabolism of phosphate is concerned the serum phosphate level seems to be a good guide and, taken in conjunction with phosphate reabsorption, affords a valuable criterion in diagnosis. After thorough scrutiny of the 50 patients in this study, five instances of primary hyperparathyroidism due to neoplasms of these glands were proved by the operative and histological findings.

SURGERY.

New Surgical Approach for Upper Thoracic Sympathectomy.

L. T. PALUMBO (*A.M.A. Arch. Surg.*, May, 1958) describes a new surgical approach for upper thoracic sympathectomy, designed to avoid Horner's syndrome. This is an anterior trans-thoracic transpleural approach through the third intercostal space to the thoracic sympathetic chain. By this means, he is able to remove the sympathetic chain from the fifth thoracic ganglion up to the stellate ganglion. He states that this method provides an easier and better exposure than other techniques and can be accomplished with a lower morbidity and mortality than former procedures. He considers that it has a wide clinical application providing for a complete sympathetic denervation of the head, neck, shoulder, upper extremity, heart and coronary circulation. He states that this method incurs no physiological changes which would interfere with the patient's social or economic life, and that it avoids a Horner's syndrome, even though the lower part of the stellate ganglion is removed and the first thoracic ramus is divided. From the results of this technique and other studies, the author has developed a new concept concerning the sympathetic pupillo-ciliary pathways in man. He points out that the current concepts concerning the sympathetic pathways which dilate the pupil in man contend that the pre-ganglionic neurons leave the spinal cord via the ventral roots at the eighth cervical

and the first and second thoracic levels. These then pass via the first thoracic ramus communicans to enter the first thoracic ganglion (lower part of the stellate ganglion). They then ascend in the cervical sympathetic chain to synapse with post-ganglionic neurons in the superior cervical ganglion. Consequently any surgical procedure which divides or removes the first thoracic ramus, the first thoracic ganglion and/or the lower third of the stellate ganglion would result in a Horner's syndrome. However, the division of the first thoracic and adjoining rami and the removal of the lower third of the stellate ganglion, as shown by his technique, does not result in a Horner's syndrome in 95% of the cases. Consequently he assumes that sympathetic pupillo-ciliary pathways in man do not traverse the first thoracic ramus to the lower part of the stellate ganglion. He contends that the origin of these pathways from the spinal cord is correctly recorded, but that the point of entrance to the stellate ganglion must be in its upper rather than its lower part, and that these neurons reach the stellate ganglion by a separate paravertebral pathway.

Stenosis of the Sphincter of Oddi.

M. A. BLOCK *et alii* (*A.M.A. Arch. Surg.*, June, 1958) state that stenosis of the sphincter of Oddi is a rare cause of obstructive jaundice in the absence of other abnormalities in the biliary tract. Surgery is required for its recognition and correction. They agree that a precise definition of stenosis of the sphincter of Oddi is difficult. They consider stenosis to be present when it is impossible to pass any probe or dilator through the sphincter, or when the three-millimetre dilator is passed only with great difficulty. They consider that since in passing the dilator the operator feels the tip of the dilator adjacent to the duodenum, obstruction of the bile duct by a pancreatic lesion, by stricture of the common bile duct, or by any other lesion or abnormality proximal to the sphincter can be identified. Out of 854 patients in whom exploration of the common bile duct was performed between 1935 and 1956 at the Henry Ford Hospital, there were 47 patients in whom stenosis of the sphincter of Oddi was considered to be present. Of these 19 were jaundiced at the time of operation, which was carried out to relieve obstructive jaundice. Twenty-nine were not jaundiced at the time of surgery, but five did give a history of having been jaundiced previously. The authors state that surgical correction of isolated stenosis of the sphincter of Oddi relieves obstructive jaundice and that this is evidence of the clinical importance of this lesion. In their experience the results of surgical treatment are good. Dilatation of the sphincter of Oddi was not followed by the production or recurrence of stenosis. However, they consider that if stenosis is pronounced, transduodenal sphincterotomy should be performed. Finally, they emphasize that before a diagnosis of stenosis of the sphincter of Oddi is made, the possibility of an impacted stone or a malignant growth must be ruled out, and definite narrowing of the lumen of the sphincter must be demonstrated.

British Medical Association.

VICTORIAN BRANCH: ANNUAL MEETING.

The annual meeting of the Victorian Branch of the British Medical Association and of the Medical Society of Victoria was held on December 3, 1958, at the Medical Society Hall, Albert Street, East Melbourne, Dr. K. H. HALLAM, the President, in the chair.

MINUTES.

The minutes of the annual meeting held on December 4, 1957, were taken as read and signed as correct.

ELECTION OF OFFICE BEARERS.

The Medical Secretary announced that the Council had elected the following office bearers for 1959:

President: Dr. J. Gavin Johnson.

Vice-Presidents: Dr. H. G. Judkins and Dr. G. Newman-Morris.

Honorary Secretary: Dr. K. E. Ratten.

Honorary Treasurer: Dr. Leonard Ball.

Honorary Librarian: Dr. V. L. Collins.

Chairman of Council: Dr. H. C. Colville.

The Medical Secretary announced that the following had been elected members of the Council by the general body of members: Dr. Kevin Brennan, Dr. Grayton Brown, Dr. V. L. Collins, Dr. J. L. Frew, Dr. H. G. Furnell, Dr. Keith H. Hallam, Dr. A. M. Hutson, Dr. M. O. Kent-Hughes, Dr. W. E. King, Dr. A. B. McCutcheon, Dr. D. G. MacKellar, Dr. G. Newman-Morris, Dr. B. K. Rank, Dr. Stanley Williams.

The Medical Secretary announced that the following had been elected members of the Council by the subdivisions: Dr. Leonard Ball, Dr. A. J. M. Sinclair, Dr. T. G. Swinburne, Dr. N. L. Dodd, Dr. K. E. Ratten, Dr. H. G. Judkins, Dr. H. F. Tucker, Dr. J. Gavin Johnson, Dr. A. W. Burton, Dr. W. P. Heslop, Dr. E. Sandner, Dr. G. C. Darby, Dr. M. H. Robinson, Dr. D. F. Mitchell, Dr. W. R. Angus, Dr. B. Hutton-Jones, Dr. F. R. Phillips, Dr. D. F. Lally.

The Medical Secretary announced that the ex-officio members of the Council were: Dr. H. C. Colville, Dr. F. L. Davies, Dr. D. Roseby, Dr. Robert Southby, Dr. G. Raleigh Weigall.

ANNUAL REPORT OF THE COUNCIL.

The annual report of the Council, which had been circulated among members, was received and adopted. The report is as follows.

The Council of the Branch and the Committee of the Society present the seventy-ninth annual report of the Branch and the one hundred and third of the Society.

Election.

At the annual meeting held last December, the following members of the Council and of the Committee were elected, following a ballot of members of the Branch: Dr. Kevin Brennan, Dr. Grayton Brown, Dr. V. L. Collins, Dr. J. L. Frew, Dr. H. G. Furnell, Dr. Keith H. Hallam, Dr. A. M. Hutson, Dr. M. O. Kent-Hughes, Dr. W. E. King, Dr. D. G. MacKellar, Dr. G. Newman-Morris, Dr. B. K. Rank, Dr. Robert Southby, Dr. Stanley Williams.

The following were elected to represent the subdivisions: Dr. W. R. Angus, Dr. Leonard Ball, Dr. A. W. Burton, Dr. G. C. Darby, Dr. N. L. Dodd, Dr. B. Hutton-Jones, Dr. J. Gavin Johnson, Dr. H. G. Judkins, Dr. D. F. Lally, Dr. A. B. McCutcheon, Dr. D. F. Mitchell, Dr. F. R. Phillips, Dr. K. E. Ratten, Dr. M. H. Robinson, Dr. E. Sandner, Dr. A. J. M. Sinclair, Dr. George Swinburne, Dr. H. F. Tucker.

Under Rule 9 of the Branch, Council elected Dr. Leslie Williams, who was nominated by the Victorian Medical Women's Society.

The following are ex-officio members: the trustees of the Medical Society of Victoria, Dr. H. C. Colville, Dr. F. L. Davies, Dr. D. Roseby, Dr. G. Raleigh Weigall and Dr. Robert Southby (appointed following the death of Sir Victor Hurley), and the Director for Victoria of the Australasian Medical Publishing Company, Dr. J. P. Major.

Co-opted members: Major-General W. D. Retshauge and Dr. W. E. Langford.

The Council elected the following office bearers:

President: Dr. Keith Hallam.

Vice-Presidents: Dr. J. Gavin Johnson and Dr. H. G. Judkins.

Chairman of Council: Dr. H. C. Colville.

Honorary Treasurer: Dr. Leonard Ball.

Honorary Librarian: Dr. V. L. Collins.

Honorary Secretary: Dr. K. E. Ratten.

The Executive consisted of the President, the Immediate Past President (Dr. A. B. McCutcheon) and the other office bearers.

Attendances at Council Meetings.

Twelve meetings of the Branch Council were held during the year, the following showing the attendances:

Dr. H. C. Colville .. 12	Dr. A. B. McCutcheon .. 9
Dr. G. C. Darby .. 12	Dr. Stanley Williams .. 9
Dr. F. L. Davies .. 12	Dr. J. L. Frew .. 8
Dr. N. L. Dodd .. 12	Dr. A. M. Hutson .. 8
Dr. Keith Hallam .. 12	Dr. M. O. Kent-Hughes .. 8
Dr. G. Newman-Morris .. 12	Dr. D. F. Lally .. 8
Dr. David Roseby .. 12	Dr. B. O. Hutton-Jones .. 7
Dr. G. Raleigh Weigall .. 12	Dr. W. E. King .. 7
Dr. J. Gavin Johnson .. 11	Dr. J. P. Major .. 7
Dr. D. F. Mitchell .. 11	Dr. H. G. Furnell .. 6
Dr. K. E. Ratten .. 11	Dr. M. Robinson .. 6
Dr. Robert Southby .. 11	Dr. Grayton Brown .. 5
Dr. George Swinburne .. 11	Dr. B. K. Rank .. 5
Dr. H. F. Tucker .. 11	Major-Gen. W. D. Retshauge .. 5
Dr. Leonard Ball .. 10	Dr. D. G. MacKellar .. 4
Dr. A. W. Burton .. 10	Dr. W. E. Langford .. 4
Dr. E. Sandner .. 10	Dr. W. R. Angus .. 3
Dr. Leslie Williams .. 10	Dr. F. R. Phillips .. 3
Dr. Kevin Brennan .. 9	Dr. A. J. M. Sinclair .. 3
Dr. V. L. Collins .. 9	Sir Victor Hurley .. 0
Dr. H. G. Judkins .. 9	

Dr. L. T. Griffiths attended two meetings as proxy for Dr. Angus, and Dr. N. F. Pescott and Dr. F. P. McArdle each attended one meeting as proxy for Dr. Robinson.

The highest attendance at any one meeting was 33, and the average was 29.

Subcommittees of the Branch Council.

Complaints.—Dr. Davies, Dr. Judkins, Dr. McCutcheon, Dr. Newman-Morris and Dr. Roseby.

Correspondence.—Dr. Colville and Dr. Ratten.

Ethics.—Dr. Major, Dr. Davies, Dr. King, Dr. Newman-Morris, Dr. Roseby, Dr. Southby, Dr. Weigall and the Executive.

Finance, House and Library.—Dr. Ball, Dr. Collins, Dr. Furnell, Dr. Kent-Hughes and Dr. Judkins.

Health Education.—Dr. Roseby, Dr. Brennan, Dr. Hutson, Dr. Rank and Dr. Leslie Williams.

Hospital.—Dr. Southby, Dr. Ball, Dr. Brennan, Dr. Collins, Dr. Colville, Dr. Dodd, Dr. Frew, Dr. Hallam, Dr. Judkins, Dr. Kent-Hughes, Dr. King, Dr. Rank, Dr. Weigall and Dr. Stanley Williams.

Information Service.—Dr. Rank, Dr. Ratten, Dr. Collins, Dr. Brennan, Dr. Phillips and Dr. Kent-Hughes.

Legislative.—Dr. Davies, Dr. Colville, Dr. Hallam, Dr. Rank and Dr. Sinclair.

Organisation.—Dr. Swinburne, Dr. Ball, Dr. Brennan, Dr. Burton, Dr. Colville, Dr. Dodd, Dr. Frew, Dr. Furnell, Dr. Hutson, Dr. Johnson, Dr. Judkins, Dr. Kent-Hughes, Dr. McCutcheon, Dr. Ratten, Dr. Roseby, Dr. Sinclair, Dr. Southby, Dr. Tucker, Dr. Leslie Williams and representatives of the country subdivisions.

Science.—Dr. Hallam, Dr. Grayton Brown, Dr. Collins, Dr. Furnell, Dr. King and Dr. Stanley Williams.

Social.—Dr. Roseby, Dr. Weigall and Dr. Burton.

Workers' Compensation.—Dr. Ball, Dr. Grayton Brown, Dr. Colville, Dr. Kent-Hughes, Dr. Newman-Morris, Dr. Judkins, Dr. Rank and Dr. Roseby.

Special Committees and Offices within the Branch.

Building Committee.—The President, the Honorary Treasurer, the Honorary Secretary and Sir Albert Coates.

Federal Medical War Relief Fund, Advisory Committee.—Dr. F. L. Davies, Dr. H. G. Furnell and Sir William Upjohn.

Joint Committee with Health Department re Spheres of Responsibility for Medical Services to the Community.—The President, Dr. G. Newman-Morris, Dr. A. J. M. Sinclair, Dr. V. L. Collins and Dr. George Swinburne.

Library Advisory Committee.—The Honorary Librarian, Dr. J. H. W. Birrell, Dr. F. M. C. Forster, Dr. B. Gandevia,

¹ Died during the year.

² Granted leave of absence during the year.

Dr. H. Boyd Graham, Dr. T. A. F. Heale, Dr. R. S. Lawson, Mr. Murray Maxwell and Dr. M. L. Verso.

Medical Eye Service of Victoria.—Dr. E. N. Rosen.

Medical Officers' Relief Fund (Federal) Advisory Committee.—Dr. F. L. Davies, Dr. H. G. Furnell and Sir William Upjohn.

Medical Society of Victoria, Trustees of.—Dr. H. C. Colville, Dr. F. L. Davies, Dr. D. Roseby, Dr. Robert Southby and Dr. G. Raleigh Weigall.

Museum Advisory Committee.—The Honorary Librarian, the Curator (Dr. B. Gandevia), Dr. J. H. W. Birrell and Dr. M. L. Verso.

Negotiating Committee, Salaried Appointments in Hospitals.—Dr. George Swinburne, Dr. G. Newman-Morris, Dr. H. C. Colville, Dr. K. H. Hallam, Dr. H. G. Judkins, Dr. Robert Southby, Dr. L. H. Ball and Dr. A. J. M. Sinclair.

Road Accidents Committee.—Dr. Robert Southby, Dr. J. H. W. Birrell, Dr. Leonard Ball, Dr. G. Newman-Morris, Dr. W. F. Cooper, Dr. John Lindell, Dr. Kevin Brennan and Professor E. S. J. King.

Services Recognition Fund, Trustees of.—Sir Albert Coates, Dr. H. G. Furnell and Major-General Sir Kingsley Norris.

World Medical Association Supporting Committee.—Dr. D. Roseby, Dr. K. H. Hallam, Dr. B. K. Rank, Dr. A. J. M. Sinclair and Dr. Stanley Williams.

Appointments and Nominations.

Anti-Cancer Council of Victoria.—Dr. J. E. Clarke and Dr. H. Searby.

Anti-Cancer Council, Medical and Scientific Committee of.—Professor Maurice Ewing.

Australian and New Zealand Association for the Advancement of Science, 33rd Congress.—Dr. W. P. Holman.

British Medical Association, Annual Representative Meeting, Newcastle-on-Tyne, 1958.—Dr. K. L. Chambers, Dr. J. Leon Jona and Dr. Russell Howard.

British Medical Association, Central Council.—Dr. M. L. Formby.

British Medical Association in Australia, Federal Council.—Dr. H. C. Colville, Dr. J. G. Johnson and Dr. George Swinburne.

British Medical Agency of Victoria, Proprietary, Limited, Directors.—Dr. C. H. Dickson (Chairman), Dr. Leonard Ball, Major-General Sir Kingsley Norris and Dr. Robert Southby.

British Medical Insurance Company of Victoria, Limited, Directors.—Dr. W. W. S. Johnston (Chairman), Dr. C. H. Dickson, Dr. H. G. Furnell, Major-General Sir Kingsley Norris and Dr. G. Newman-Morris.

Central Medical Library Committee.—Dr. V. L. Collins.

Conjoint Committee with the Friendly Societies' Association of Victoria.—Dr. Charles Byrne, Dr. C. H. Dickson and Dr. J. G. Johnson.

Consultative Council on Influenza.—Professor J. G. Hayden.

Consultative Council on Maternal Mortality.—Dr. J. G. Johnson.

Consultative Council on Poliomyelitis.—Sir William Upjohn.

Consultative Council on Quarantinable Diseases.—Dr. P. Gilbert.

Dietetic Association of Victoria.—Dr. T. A. F. Heale.

Fellowship of Christian Healing.—Dr. A. Murray Clarke, Dr. Arthur J. Day, Dr. J. G. Johnson, Dr. H. G. Judkins, Dr. R. Southby and Professor Lance Townsend.

Hamophilika Society.—Dr. R. J. Sawers.

Health (Proprietary Medicines) Act, Advisory Committee under the Provisions of.—Dr. Byron L. Stanton.

Hospital Benefits Association of Victoria.—Dr. C. H. Dickson, Major-General Sir Kingsley Norris, Dr. H. G. Judkins and Dr. G. R. Weigall.

Hospitals and Charities Commission, Advisory Council to.—Dr. L. H. Ball and Dr. C. H. Dickson.

Joint Insurance Adjudication Committee.—Dr. L. H. Ball, Dr. D. Roseby and Sir William Upjohn.

Lord Mayor's Fund.—Dr. R. D. Altholson.

Lord Mayor's Country Children's Holiday Camp, Committee of.—Dr. Gwynne Villiers.

Massages' Registration Board.—Dr. Bryan Keon-Cohen and Dr. Leigh T. Wedlick.

Certification of Death (Cremation), Special Committee with Commission of Public Health and Law Department.—Dr. C. H. Dickson.

The Medical Journal of Australia, Victorian Correspondent.—Dr. C. H. Dickson.

Medical Society Trust Company, Limited, Directors.—Dr. Leonard Ball, Dr. V. L. Collins, Dr. H. C. Colville, Dr. J. G. Johnson, Dr. K. H. Hallam, Dr. H. G. Judkins, Dr. A. B. McCutcheon and Dr. K. E. Ratten.

Medico-Pharmaceutical Liaison Committee.—Dr. W. E. King, Dr. D. Roseby, Dr. Byron Stanton, the President (ex-officio) and the Medical Secretary.

Melbourne Medical Post-Graduate Committee.—Dr. F. R. Phillips and Dr. G. R. Weigall.

Museum of the Medical Society of Victoria, Curator.—Dr. Bryan Gandevia.

National Committee of British Commonwealth Collection of Microorganisms.—Professor S. D. Rubbo.

National Safety Council of Australia.—Dr. Kevin Brennan.

Nursing Aide School, Committee of Management.—Dr. W. D. L. Farrar.

The Occupational Therapy School of Victoria.—Dr. D. O. Longmull.

Old People's Welfare Council.—Dr. A. B. McCutcheon and Dr. W. W. S. Johnston.

Opticians' Registration Board.—Dr. R. Collmann and Dr. R. F. Lowe.

Pensioner Medical Service, Committee of Inquiry.—Professor J. F. Hayden, Dr. C. Byrne, Dr. J. G. Johnson and Dr. M. O. Kent-Hughes.

Red Cross Blood Transfusion Service, Advisory Committee.—Dr. Charles Byrne.

Rehabilitation Medical Advisory Committee, Victoria (Social Services Department).—Dr. J. Cuming Stewart.

Rotary Club (Citizens' Committee).—The President of the Branch.

Royal Flying Doctor Service of Australia.—Dr. George Simpson.

State Medical Planning Committee.—Dr. H. G. Furnell.

Victorian Baby Health Centres' Association.—Dr. Stanley Williams.

Victorian Bush Nursing Association.—Dr. E. McComas.

Victorian Council of Speech Therapy.—Dr. Robert Southby.

Victorian Documentary Film Council, Advisory Committee on Scientific Films.—Dr. Morris Davis and Dr. R. S. Hooper.

Victorian Health Week Committee.—Dr. D. Roseby.

Victorian Nursing Council.—Dr. W. M. Lemmon and Dr. J. L. Frew.

Victorian Society for Crippled Children.—Dr. John Cloke.

Branch Convocation.

The following were elected for the year 1958: *Melbourne Central:* Dr. C. J. O. Brown, Dr. J. E. Clarke, Dr. E. E. Dunlop, Dr. C. H. Fitts, Dr. H. Boyd Graham, Dr. T. A. F. Heale, Dr. R. S. Lawson, Dr. Kate Mackay, Dr. G. Penington, Dr. H. A. Phillips, Dr. S. Reid, Dr. C. A. M. Renou, Dr. J. E. Sewell, Dr. Norman L. Speirs, Dr. G. Springthorpe, Dr. G. M. Tallent, Dr. C. S. Wood. *Eastern Suburban:* Dr. W. L. Carrington, Dr. A. Feddersen, Dr. H. V. Francis, Dr. A. L. Hare, Dr. W. Hewitt, Dr. H. Hosking, Dr. H. Indian, Dr. H. H. Jackson, Dr. C. Lancaster, Dr. P. G. McMahon, Dr. R. G. Penington, Dr. N. McH. Ramsey, Dr. J. G. Simpson, Dr. T. Stokoe, Dr. K. Summons. *Northern Suburban:* Dr. F. A. L. Bacon, Dr. D. Cordner, Dr. J. E. Dunn, Dr. R. Gurry, Dr. D. C. Lear, Dr. H. R. Walker, Dr. I. A. Wilson, Dr. I. D. Wilson. *North Eastern Suburban:* Dr. C. M. Greer, Dr. L. J. Hartman, Dr. W. P. Heslop, Dr. B. H. McColl, Dr. C. F. MacGillcuddy. *Southern Suburban:* Dr. J. H. Body, Dr. D. L. Colle, Dr. G. A. Guthrie, Dr. A. Ley, Dr. L. Middleton, Dr. A. Rosenhain, Dr. R. S. Smibert. *South Central Suburban:* Dr. D. J. M. Dunn, Dr. E. A. C. Farran, Dr. L. Knight, Dr. J. Smibert, Dr. Q. Whitehead, Dr. C. W. Wilson. *South Eastern Suburban:* Dr. J. F. Adamson, Dr. J. F. Akeroyd, Dr. James Best, Dr. R. D. Buntine, Dr. J. Clough, Dr. J. V. C. de Crespigny, Dr. C. C. Dye, Dr. D. I. Hart, Dr. N. H. Luth, Dr. R. Y. Mathew, Dr. M. Morris, Dr. G. W. Patterson. *Western Suburban:* Dr. D. D. Coutts, Dr. A. H. Green, Dr. L. Gurry, Dr. R. H. Hardy, Dr. G. O. Phillips. *Ballarat:* Dr. G. R. Davidson, Dr. G. T. James, Dr. E. R. G. Shell. *Bendigo:* Dr. N. Harrington, Dr. W. J. Long, Dr. A. L. Newson, Dr. W. Rosenthal. *Geelong:* Dr. D. A. Kidd, Dr. H. Millikan, Dr. E. I. Fargie. *Gippsland:* Dr. J. M. Andrew, Dr. W. G. Birks, Dr. A. A. Crook, Dr. W. F. Ferguson. *Goulburn:* Dr. F. V. Harder, Dr. R. O. Mills. *North Eastern Country:* Dr. H. A. Marks, Dr. M. Rohan. *North Western Country:* Dr. A. Hinchley, Dr. T. Walpole, Dr. R. Webster. *South Western Country:* Dr. A. E. Brauer, Dr. S. Fitzpatrick, Dr. B. D. Vaughan.

Membership Roll.

The number of members on the roll at October 22, 1958, was 3069, which was 74 more than last year. Two hundred and seventy-one names were added (123 by election, 56 were reinstated on payment of arrears, and 92 were transferred from other States and overseas), and 197 were removed (25 by death, 85 by transfer, 14 by resignation, and 73 allowed their subscriptions to fall into arrears).

Honorary medical members number 44 and there is one complimentary member.

Honorary student associates number 28.

Deceased.

The deaths of the following members and former members occurred during the year and are recorded with regret:

Dr. G. Atkinson, Dr. J. M. Baxter, Dr. J. A. Broben, Dr. A. B. Corkill, Dr. N. Dennerstein, Sir Thomas Dunhill, Dr. F. P. Edwards, Dr. E. Gandevia, Dr. L. P. Gill, Dr. L. S. Hayes, Sir Victor Hurley, Dr. John Kelly, Dr. C. Klug, Lady Leitch (Dr. Bertha Main), Dr. G. C. Love, Dr. E. R. Mackay, Dr. John McPherson, Dr. T. G. Millar, Dr. Robert Officer, Dr. John O'Sullivan, Dr. R. L. Rosefield, Professor A. Schuller, Dr. D. M. Seeley, Dr. John Shaw, Dr. J. C. Spencer, Dr. W. A. Stewart, Dr. H. Hume Turnbull, Dr. J. Warne, Dr. Janet Watt, Dr. E. R. White.

Following the death of Sir Victor Hurley on July 17, 1958, Council recorded the following special minute:

The Council of the Victorian Branch of the British Medical Association records with deep regret the death of Thomas Ernest Victor Hurley, K.B.E., C.B., C.M.G., V.D., M.D., M.S., F.R.C.E. Eng., F.R.A.C.S., sometime President of the Branch and of the Federal Council of the British Medical Association in Australia, who gave distinguished service to his country in two wars and a lifetime of service to the medical profession and the community exemplified by his work as a master surgeon, his association with the Royal Melbourne Hospital for nearly fifty years and by the holding of high office in many public bodies. Council extends its sympathy to Lady Hurley and her family.

Remembrance Day.

In the presence of members of the Branch and relatives of deceased medical officers, a short ceremony was held in the foyer of the Medical Society Hall on Tuesday, November 11, 1958, to honour the Victorian medical officers who lost their lives in the service of the Commonwealth in the two world wars of this century. After the Medical Secretary had read the names of those killed on service and of those who had died while serving, the President laid a wreath on the War Memorial.

Church Services.

The ninth annual church services for the medical profession were held in St. Paul's and St. Patrick's Cathedrals on Sunday, February 9, 1958. Members and medical students assembled in the precincts of the cathedrals and entered in procession. Members' families also attended the services.

At St. Paul's Cathedral the sermon was preached by the Right Reverend J. D. McKie, M.A., Bishop of Geelong. The preacher at St. Patrick's Cathedral was the Reverend Brian Burke, of St. Mary's Church, Hampton.

At St. Paul's the President, Dr. Keith Hallam, and the Vice-President, Dr. J. G. Johnson, read the Lessons.

Congratulations.

During the past year the Branch Council had pleasure in congratulating the following:

Sir Harry Platt (Baronet, England), on being created a Baronet; Sir Macfarlane Burnet on being awarded the Order of Merit; Sir Stewart Duke-Elder (England), on being admitted to the Royal Victorian Order as Knight Grand Cross; Professor Sir John Eccles (Canberra), Sir Benjamin Edey, C.B.E. (N.S.W.), Sir Kenneth Fraser (Queensland), Sir Ronald Grieve (N.S.W.), Sir William Upjohn, O.B.E., and Sir Ralph Whishaw, C.B.E. (Tasmania), on being created Knights Bachelor; Mr. Lambert Rogers, C.B.E. (England), Dr. Harold Crawford, O.B.E. (Queensland), Group Captain R. B. Davis, O.B.E., Dr. L. R. Mallen, O.B.E. (South Australia), as the recipients of honours from Her Majesty the Queen; and Mr. E. K. Rank on his appointment as Sims Travelling Professor. Congratulations were also forwarded to the President (Dr. J. G. B. Muir) and the Executive Committee on the success of the Tenth Session of the Australasian Medical Congress in Hobart, March 1 to 7, 1958.

Golf.

The nineteenth annual golf tournament of the Branch was held on Thursday, November 14, 1957, on the West Course

of the Royal Melbourne Golf Club. Dr. J. R. Searis won the Weigall Cup (championship), and the Roseby Cup (handicap) was won by Dr. G. Warming. The spoon competition was won by Dr. G. P. Ryan, Dr. J. A. McLean and Dr. L. Rosengarten.

Entertainment.

The President and members of Council welcomed new medical graduates into the profession at afternoon tea in the Library on December 23, 1957, and the supplementary graduates were similarly welcomed on April 1, 1958.

On April 11 the Branch Council gave a dinner at the Union House, University of Melbourne, to Sir William Upjohn, O.B.E., after he had received a knighthood from Her Majesty the Queen.

The Branch Council entertained members of the Federal Council, who were meeting in Melbourne, at a dinner at the Union House on Saturday, September 6, and past presidents of the Branch were also invited.

On October 29, 1958, the President entertained members of Council and their wives and representatives of other organizations at a buffet dinner at the Union House.

Meetings of the Branch.

The following meetings of the Branch were held in Melbourne.

February.—Professor S. D. Rubbo and Dr. Ian Stahle spoke on "A Visit to Moscow".

April.—Professor K. F. Russell showed the Royal College of Physicians' film, "William Harvey", and gave a commentary.

May.—Dr. J. H. W. Birrell spoke on "Road Accidents and Alcohol".

June.—Professor Richard Lovell, Professor of Medicine in the University of Melbourne, spoke on "Acute Renal Failure".

July.—Dr. E. Cunningham Dax gave an address, illustrated by slides and exhibits, entitled "Modern Illness and Mental Art".

August.—At the meeting held on August 6, a symposium was presented on "Staphylococcal Infections", the speakers being Dr. J. W. Perry ("Observations upon the Behaviour of Staphylococci in a Hospital"), Dr. W. J. Stevenson ("Epidemiological Aspects"), Dr. B. L. Marks ("Staphylococcal Pneumonia in Adults") and Dr. V. L. Collins ("Some Aspects of Staphylococcal Infections in Childhood").

October.—Dr. Clive Fitts delivered the twenty-fifth Sir Richard Stawell Oration entitled "Serendipity".

November.—On November 12 a symposium was presented on "Neonatal Problems". The speakers were Dr. T. G. Maddison ("Jaundice"), Dr. M. J. Robinson ("Cyanosis"), Dr. W. H. Kitchen ("Pallor").

The following demonstrations and clinical meetings were held in Melbourne.

May.—Alfred Hospital.

July.—Anatomy Department, University of Melbourne.

August.—A medico-legal demonstration night at the City Morgue.

September.—Pathology Department, University of Melbourne, and Royal Children's Hospital.

October.—Prince Henry's Hospital.

The following meetings were held in the country.

May.—Colac. Clinical cases were presented at the Colac District Hospital in the afternoon, and in the evening Dr. Robert Officer gave an illustrated talk on his visit to China.

June.—Bendigo. Clinical cases were presented in the afternoon at the Bendigo and Northern District Base Hospital, and in the evening Dr. John Tucker gave an illustrated talk on "A Visit to India".

The Branch Council wishes to express its appreciation and thanks to the committees and honorary secretaries of country subdivisions for arranging the country meetings, to the wives of members of the subdivisions for their hospitality to visiting members and their wives, and to the Committees and matrons of the Colac and Bendigo Hospitals for the provision of facilities.

The Branch Council also thanks the staffs of the Anatomy and Pathology Departments, the Alfred Hospital, Royal Children's Hospital, Prince Henry's Hospital and the City Morgue for arranging the meetings.

Special Meeting of the Branch.

At a special meeting of the Branch held on May 21, the Council submitted the following addition to Rule 28 of the Branch (Ethical Principles), which was adopted unanimously:

Rule 38: "Ethical Principles". "It is unethical for a member of the British Medical Association in Victoria—

(g) Directly or indirectly to apply for or to be interested or concerned in the application for or to acquire or retain whether in his own name or in that of his nominee any stock shares or other interest in any company engaged in the sale of drugs medicines or medical or surgical appliances (hereinafter referred to as "the Vending Company") or in any other company which to the knowledge of such member holds shares in the Vending Company where it is directly or indirectly a term condition agreement or understanding attaching to the acquisition or ownership of such stock shares or other interest that the member will prescribe products of the Vending Company or otherwise promote the sale of such products.

Business of Council.

Branch Organization and Political Activities.

Early this year a document prepared by a committee of the Australian Labour Party in reference to proposals for a National Health Scheme came to the knowledge of the Branch Council. Virtually, that committee recommended the introduction of the British National Health Service, and a pamphlet with the caption "Is This Your Future?" was prepared by the Branch Council and circulated to members. Both within and without the profession the publication was very well received and undoubtedly led to subsequent revision of the plans of the Party.

In addition, subdivisional meetings were organized throughout the State to inform members of the views of Council on the question of Government-sponsored services. Prior to these, a special meeting of subdivisional office bearers was held to discuss organizational plans. The Council is most appreciative of the work done by the committees and honorary secretaries of subdivisions.

Meetings were arranged with representatives of all political parties, at which were expounded the views of the organized medical profession, and the position of the profession was very aptly summed up in the following statement by Dr. H. C. Colville, President of the Federal Council of the Association, at a conference with the National Health Steering Committee of the Australian Labour Party:

We cannot, of course, escape some contact with politics, but in that regard our attitude is quite simple: if any political party advocates a form of medical service which we think is good, then we support that party; if any political party advocates a form of medical service which we think is bad, then we oppose that party; and there our excursions into politics begin and end.

The National Health Service.

Until now it has not been possible for benefit organizations operating under the National Health Act to provide benefits for what are in fact "uninsurable risks"—those persons suffering from preexisting or chronic illness. Following a recent amendment to the Act, however, benefit organizations will on January 1, 1959, be able to establish "special accounts", to which will be transferred all contributors over the age of 65 years, and to which may be transferred contributors with preexisting or chronic illnesses and those who have exhausted their entitlement to benefit by exceeding the maximum amounts payable. Any deficit in these "special accounts" will be made good by the Commonwealth Government and, while no contributor transferred to a "special account" will lose, many of those at present ineligible for benefits will gain.

There is no doubt that the liberalization of the Act is, to some extent, the result of intensive campaigning by the Branch Council and other bodies with the object of improving the National Health Service.

There is, however, still room for improving the service, particularly in redrafting of the schedule of benefits, and a subcommittee of Council is engaged in the task of preparing recommendations for submission to the Federal Council.

Hospital Matters.

(a) *Consent to Operation.*—The Hospitals and Charities Commission was informed that a form of consent to operation which hospitals had been requested to use was unacceptable, and the matter has apparently been left in abeyance.

(b) *Chief Executive Officers.*—Regulations under the Hospitals and Charities Act at present virtually preclude a medical graduate from appointment as chief executive officer of a hospital, that office for practical purposes being reserved for non-medical administrators. Representations on this matter have again been made to the Minister of Health, but so far without result.

(c) *Medical Salaries in Hospitals.*—The Hospitals and Charities Commission has sought approval from the Minister of Health to establish an advisory body to make recommendations in relation to the salaries of medical practitioners employed in hospitals, and has invited the Council to nominate representatives to that body. The body, if appointed, will not have legal status, but it is assumed that its recommendations will be accepted by the Commission and, in turn, by the hospitals.

Reorganization of Subdivisions.

With the growth of population and the number of medical practitioners, together with changes in their distribution, the relative strength of the subdivisions, and in some cases their areas, have become unbalanced and unwieldy. Council has requested the Organization Subcommittee to consider the matter of reorganization of the subdivisions.

Section of Medical Administration.

During the year approval was given to the establishment of a Section of Medical Administration, which will be open to members of the Branch primarily engaged in administrative duties.

Workers' Compensation in Victoria.

Following conferences with the Fire and Accident Underwriters' Association of Victoria, a new agreement was negotiated embodying a schedule of fees which came into operation on January 1, 1958.

Until the passage of the Workers' Compensation Act of 1953, only an employed person suffering "personal injury by accident arising out of or in the course of employment" was entitled to compensation, but that Act altered this phrase to "personal injury arising out of or in the course of employment". As a result of legal decisions the term "injury" has come to have a wider and wider connotation and embraces not only "accidents" (as the term is commonly accepted), but many medical conditions such as coronary occlusion, and surgical conditions such as appendicitis and perforated peptic ulcer, if those conditions developed during working hours as interpreted under the Act, or were aggravated or were contributed to by employment. In other words, medical opinion frequently has little bearing on the question of eligibility for compensation, which is now a matter for legal interpretation. As a consequence, practising doctors are finding that more and more of the financial responsibility for their assumedly private patients is no longer an individual responsibility, but one which reverts to the employer. This aspect has been considered during the year by the Workers' Compensation Subcommittee of the Council and will be the subject of a communication to members in a monthly paper early in 1959.

Holding of Shares in Drug and Medical Supply Companies.

Disapproving of the methods adopted by a drug company, Council submitted a new ethical rule which was adopted at a general meeting of the Branch on May 21, 1958, defining the conditions under which it is considered that members may ethically hold shares in drug and medical supply companies.

The Problem of Road Accidents.

It was submitted to the Minister of Health that now that road accidents had become the third commonest cause of death in the community, and under the age of 40 years the commonest, their reduction was one of the major problems in preventive medicine, and he was asked to set up a committee of investigation. In reply the Minister expressed his interest in the subject and suggested, as a first step, that the Association should prepare a report. Council has appointed a Road Accident Committee which has collected a great deal of valuable information and is now preparing a report for presentation to the Minister.

The Problem of Tetanus.

Members have been informed through the monthly paper of the recommendations of the staff of the Commonwealth Serum Laboratories in reference to protection against tetanus, and in addition the Minister of Health has appointed a special committee to which Council has nominated a representative further to examine the problem.

Fees for Post-Mortem Examination and Attendance as a Witness at Inquest.

Unfortunately these fees, which are quite inadequate and the subject of considerable dissatisfaction among members, are determined by the Coroner's Act, and any alteration requires amendment of the Act. Despite unsuccessful attempts in recent years, representations have again been made to the Attorney-General for an increase in the fees.

Many other matters have been dealt with by both the Branch Council and the Executive in addition to the above. A great deal of business arising from the activities of the Federal Council has not been mentioned here, as full reports of the meetings of the Federal Council appear in *THE MEDICAL JOURNAL OF AUSTRALIA*. Particularly, however, during the year considerable time was devoted to two matters, the Pensioner Medical Service and the conditions of appointment and remuneration of Repatriation local medical officers, the final terms of both these services being negotiated by the Federal Council.

Federal Council.

Two meetings of the Federal Council were held during 1958, one in Hobart in February and the other in Melbourne in September. Full reports of the proceedings of the meetings have been published in the issues of *THE MEDICAL JOURNAL OF AUSTRALIA* of April 12 and October 18, 1958.

The Library of the Medical Society of Victoria.

Meetings of the Library Advisory Committee have been held monthly throughout the year. Membership remains the same, except that Dr. F. M. C. Forster has replaced Dr. J. W. Johnstone, who resigned because of pressure of other commitments.

Loans from the library varied little from the previous year, the number being approximately 2500, of which 2150 were to members direct and the balance to 25 libraries in Melbourne and other States. Books and journals borrowed from 20 Melbourne and interstate libraries totalled 250.

One hundred and twenty new books have been added to the library, including a copy of "The Australian Encyclopedia". Of these, sixty were purchased and others were gifts from *THE MEDICAL JOURNAL OF AUSTRALIA*, members of the Association and replacements from Lewis's loan library. A number of older books from private collections has also been presented. New journal titles are *Archives of Physical Medicine and Rehabilitation*, *Tubercle*, *Bibliography of Medical Reviews*, and the Medical Research Council Memoranda.

The removal of obsolete books from the shelves continues, a section being considered at each meeting of the Committee. Subscriptions to the following journals were discontinued: *Journal of Pathology and Bacteriology*, *Journal of Physiology*, *Journal of General Physiology*, *Collected Papers of the Mayo Clinic*. As these are highly specialized and little used, it was decided to transfer the holdings to the Central Medical Library Organization, where they have been retained in the Medical School Library and are available on loan to members of the B.M.A. The Committee acceded to the request of the Library Committee of the Victorian Eye and Ear Hospital for transfer to that hospital of the Medical Society holding of the *Transactions of the American Ophthalmological Society*, conditional on the subscription being maintained and the journals being available to members of the B.M.A. The subscription to *Medical and Biological Illustrations* was also discontinued and the holding transferred to the Victorian Eye and Ear Hospital.

The room made available at Mollison House for storage purposes has been equipped with shelving and now accommodates old volumes removed from the rooms at the back of the Library which are to house the collection of the Museum of the Medical Society of Victoria.

Following the removal of the library of the Physiotherapy Association, the Committee considered a rearrangement of the Library to improve the appearance and make better use of space. The Executive agreed that the advice of an architect who specializes in this work be sought. This is now under discussion.

Correspondence and discussions have continued regarding the proposed formation of a Central Medical Library for the Melbourne area as a development of the Central Medical Library Organization formed a few years ago. The comprehensive service envisaged could be of great value to practitioners and research workers throughout the State, and the possibilities are worthy of further investigation. Professor K. F. Russell, Chairman of the Central Medical Library Organization, was invited to attend a meeting of the Committee and explain the proposed scope and the anticipated effects on the activities of existing medical libraries.

The Committee wishes to record appreciation of gifts from The British Medical Insurance Company, The Medical Journal of Australia, Medico-Legal Society of Victoria, Ciba Pharmaceutical Products Incorporated, Dr. Lucy Bryce, Dr. Boyd Graham, Dr. S. G. L. Catchlove, Dr. M. Kelly, Dr. R. S. Lawson.

Museum.

The past year has seen considerable progress in the development of the Museum, not merely as a repository, but

as a focus of historical research. Two factors have been responsible for these advances: first, the part-time employment of Miss Ann Tovell as Assistant to the Honorary Curator, and second the gift of a specially designed show case; finance in both instances was provided by the British Medical Insurance Company.

The display case offers a constant challenge, in that it must be filled. Three exhibitions have been arranged. The first was one of medical medallions, plaquettes and jetons, the second of a small selection of documents and printed material relating chiefly to the early days of the Medical Society of Victoria, and the third, which is current, illustrates the evolution of the stethoscope and allied diagnostic instruments. The latter is accompanied by an account of the detailed modifications of the stethoscope over a century, which although incomplete appears to be the first attempt to describe at least the later innovations. This paper will be submitted for publication.

Further to plans made last year in conjunction with the Library, a start has been made in grouping together separate publications by Australian doctors. The catalogue of this collection will ultimately form a useful historical reference list. Books published in any country prior to 1850 will also form a separate section. This work has commenced with checking of catalogue entries and rearrangement by authors alphabetically. For the first time for many years the leather of older books has been dressed, while some have been repaired or set aside for rebinding. A list, as yet incomplete, of Library and Museum holdings of works published prior to 1850 has been forwarded to the University for incorporation in a master file of Melbourne holdings of older medical works.

The collection, filing and detailed indexing of reprints of Australian medico-historical interest have continued. Over 350 reprints with over 1600 subject entries are now held. A separate index to material available elsewhere has been begun. Its most important section at present is a subject index to the records of some Government departments held in the Archives Department of the Melbourne Public Library, to the staff of which we are greatly indebted for their cooperation. These indexes, with those of Museum holdings of letters and documents, have reached a stage where they are of considerable research value; increasing numbers of inquiries for information during the year have emphasized the importance of this time-consuming work. Several inquiries have come from overseas. From material in the Museum archives, Miss Tovell has prepared a biographical sketch of one of Australia's early woman doctors which is in course of publication. She is also preparing a list of papers of Australian interest which appeared in British medical journals from 1790 to 1880. When complete this list must form a standard reference, and indeed it has already proved its worth.

Accessions have come from a number of sources during the year. Donors and those who have lent items for display are too numerous to list individually, but the practical expression of their interest in the work of the Museum is greatly appreciated. However, it is certain that much material still exists which could usefully be preserved, and the further help of members is earnestly sought. Information as to the existence of letters, diaries, instruments and photographs is particularly requested; the material may be indexed and its location noted even if the items cannot be permanently transferred to the Museum. Perhaps some members may be able to approach the descendants of former doctors; others could let us have fragments of reminiscence, sealed if necessary; others could forward us any minor references in old or obscure books, newspapers or periodicals to matters of Australian medical interest in the nineteenth century (this applies particularly to country districts). All these items will be indexed for future use.

It is a pleasure to record my immense gratitude to Miss Tovell for her painstaking and thorough work, which has led, within a few months, to progress of permanent value to the study of Australian medical history, and to the British Medical Insurance Company, whose financial assistance made this possible.

BRYAN GANDEVIA,
Honorary Curator.

Reports of Subdivisions.

Metropolitan.

South Central.—Office bearers: Branch Council representative, Dr. J. Gavin Johnson; Chairman, Dr. James Smibert; Honorary Secretary, Dr. L. W. Knight.

Two meetings of the subdivision were held during the year, at which various matters were discussed including the Pensioner Medical Service, fees in general practice, medical services to war widows, appearances on television and the future of medical practice. The main subject discussed was

the future of the medical profession, a special meeting being held in this connexion on July 31, 1958.

LINDSEY KNIGHT,
Honorary Secretary.

Northern.—Office bearers: Branch Council representative, Dr. K. E. Ratten; Chairman, Dr. S. J. Whiteside, Honorary Secretary, Dr. K. E. Ratten.

One meeting was held during the year. An address was given by Dr. C. H. Dickson, the Medical Secretary, on the National Health Scheme. Considerable discussion followed, and the action taken by the Branch Council in regard to the Labour Party policy was endorsed.

K. E. RATTEN,
Honorary Secretary.

Melbourne Central.—Office bearers: Branch Council representatives, Dr. Leonard Ball, Dr. Alex Sinclair, Dr. T. G. Swinburne; Chairman, Dr. Leonard Ball; Honorary Secretary, Dr. Alex Sinclair.

A meeting of the subdivision was held on April 29, 1958, which approximately 100 members attended. The Australian Labour Party National Health Scheme proposals were discussed, and it was clear that the majority of those present were opposed to a scheme based on capitation fee or salary. The following resolutions were passed:

That this meeting of the Subdivision supports the Branch Council in any measures it may take to oppose the introduction of any organized health scheme which interferes with the patient-doctor relationship.

That this meeting of the Central Subdivision supports any action the Council of the Victorian Branch of the B.M.A. may take in accordance with the terms outlined by the meeting to preserve and improve the present Page scheme.

ALEX SINCLAIR,
Honorary Secretary.

Western.—Office bearers: Branch Council representative, Dr. N. L. Dodd; Chairman, Dr. N. L. Dodd; Honorary Secretary, Dr. Donald D. Coutts.

During the year a meeting of the subdivision was held at Footscray to discuss the National Health Service and it was resolved:

That this Subdivision will not accept any national service which introduces a capitation fee.

It was also agreed that the subdivision shall meet once in every quarter.

DONALD D. COUTTS,
Honorary Secretary.

Southern.—Office bearers: Branch Council representative, Dr. H. F. Tucker; Chairman, Dr. L. C. Brittingham; Honorary Secretary, Dr. A. O. Rosenhain.

A meeting was held on July 9, 1958, when the speakers were Dr. Keith Hallam, Dr. George Swinburne and Dr. C. H. Dickson. Of the total number of members in the subdivision, only forty attended this important meeting, which was arranged to discuss recent medico-political developments. The following resolution was passed unanimously:

This meeting accords its appreciation of, and confidence in, the action of the Council.

A. O. ROSENHAIN,
Honorary Secretary.

Eastern.—Office bearers: Branch Council representative, Dr. H. G. Judkins; Chairman, Dr. A. S. Ferguson; Honorary Secretary, Dr. H. J. Hosking.

A very well attended meeting was held on March 21, 1958. After the election of office bearers, Mr. G. Swinburne spoke on "The Implications of the Labour Party's National Health Scheme Proposals". Details of negotiations between the Federal Council and various political bodies in regard to the National Health Service were presented. A lively discussion followed, and the meeting concluded with the passage of a motion supporting the policy of the Federal Council in respect to the National Health Service.

H. J. HOSKING,
Honorary Secretary.

South Eastern.—Office bearers: Branch Council representative, Dr. A. W. Burton; Chairman, Dr. H. J. P. Ham; Vice-Chairmen, Dr. T. R. Thomson and Dr. H. Stevenson; Honorary Secretary, Dr. G. W. Patterson.

Two meetings of the subdivision were held in 1958, and a number of district meetings.

A special meeting was called in March to ascertain the views of members of the subdivision on the proposals of the Australian Labour Party for a National Health Service. Subsequently, twelve smaller meetings were arranged at

various centres from Armadale to Frankston, and the views of 224 members of the subdivision were obtained either at these meetings or by personal approach. It is considered that this represents as nearly as possible a 100% cover of those members at present actively engaged in general practice in this subdivision.

Of the members contacted, 221 expressed themselves uncompromisingly opposed to a National Health Scheme on the British model, and supported the Branch Council's proposals to improve the present National Health Service, with the exception of the proposal that a scale of average fees should be compiled, which was objected to by a small minority.

The over-all impression gained from the survey in the subdivision was the solidity of opposition by general practitioners to the Labour Party plan and the support for constructive action by the Federal and Branch Councils.

At the meeting held in October the office bearers were elected and the subdivision's representative on the Branch Council, Dr. A. W. Burton, gave a report on medico-political developments.

G. W. PATTERSON,
Honorary Secretary.

Country.

North Eastern.—Office bearers: Branch Council representative, Dr. F. R. Phillips; substitute representatives, Dr. M. Rohan and Dr. K. Lipshut; Chairman, Dr. D. D. Browne; Honorary Secretary, Dr. M. Rohan; Honorary Treasurer, Dr. H. Marks.

A general meeting of the subdivision was held at Wangaratta on March 23, 1958, when the office bearers were elected.

On April 12, 1958, the Royal Australasian College of Surgeons meeting was held at Wangaratta Base Hospital, when the following speakers gave lectures: Dr. D. D. Browne (Wangaratta), Mr. R. H. Stanistreet (Wangaratta), Mr. J. Ziegler (Wagga), Mr. John Clarebrough (Melbourne), Mr. Robert Officer (Melbourne).

On June 7, 1958, the Melbourne Medical Post-Graduate Committee provided a panel of lecturers who discoursed on the following subjects: "Management of Hypertension" (Dr. Austin Doyle), "Hematuria" (Mr. J. B. Somerset), "Habitual Abortion" (Mr. W. J. Rawlings).

Monthly meetings have been instituted by the Wangaratta members, at which recorded lectures with slides are presented.

MATTHEW ROHAN,
Honorary Secretary.

Bendigo.—Office bearers: Branch Council representative, Dr. E. Sandner; substitute representatives, Dr. D. G. Gibbs and Dr. M. Clark; Chairman, Dr. N. N. Harrington; Vice-Chairman, Dr. H. C. Furton; Honorary Secretary, Dr. M. Clark; Honorary Treasurer, Dr. P. Kirby; Committee, Dr. W. Rosenthal, Dr. A. J. Walters, Dr. A. L. Newson; Library Subcommittee, Dr. D. G. Gibbs, Dr. G. H. McDonald, Dr. H. M. Pannifex.

Four clinical meetings and a Branch meeting were held during the year, which were all well attended. The Branch meeting was followed by a dinner at the Shamrock Hotel, and a most interesting after-dinner talk by Dr. J. Tucker, who spoke of his recent visit to India. The members of this subdivision are grateful to Dr. Tucker and other visitors for their attendance.

M. CLARK,
Honorary Secretary.

Geelong.—Office bearers: Branch Council representative, Dr. G. C. Darby; substitute representatives, Dr. E. Fargie and Dr. H. Millikan; Chairman, Dr. M. W. Morris; Vice-Chairmen, Dr. E. Fargie and Dr. H. Millikan; Honorary Secretary, Dr. V. D. Plueckhahn; Honorary Treasurer, Dr. M. S. Benson; Assistant Secretary, Dr. K. Coleman.

Five business meetings were held during the year with an average attendance of thirty-two members.

A special general meeting was held concerning nationalization of medicine. With its follow up, 74 of the 78 medical practitioners in the area were personally contacted, and unanimously passed a motion fully endorsing the policy of the Victorian Branch Council on the matter.

Seven meetings of the full committee were held. In addition, in June the committee met a deputation from the Geelong Trades Hall Council at a special meeting. This meeting succeeded in amicably discussing many matters concerning workers' compensation in Geelong. The waters since have been far less troubled.

A Branch meeting was held in October, 1957, at the Geelong and District Hospital. Fourteen local members demonstrated clinical cases in the pathology department during the early afternoon. Following afternoon tea, two

talks were given in the Lecture Hall: "Some Dangers of Hypotensive Therapy", Dr. J. Agar; "The Ubiquitous Staphylococcus", Dr. V. Plueckhahn.

In the evening 124 members and wives attended a cocktail party and dinner at the Carlton Hotel. This was followed by an illustrated talk on "The People of Pakistan" by Mr. B. K. Rank.

The annual dinner dance of the subdivision was held in September, 1958. This is becoming an annual feature of the subdivision.

V. D. PLUECKHAHN,
Honorary Secretary.

Gippsland.—Office bearers: Branch Council representative, Dr. D. F. Mitchell; substitute representatives, Dr. A. A. Crook and Dr. W. G. Birks; Chairman, Dr. J. M. Andrew; Honorary Secretary, Dr. J. E. Joseph.

On October 14, 1957, a meeting was held at the Gas and Fuel Corporation works in Morwell. A lecture was given by Mr. Douglas Donald on "Industrial Medicine". Later, a tour of the works was made by all present. This lecture was also attended by representatives of the Section of Industrial Medicine, B.M.A., and of the Industrial Nurses Guild. In the evening Mr. A. R. Wakefield gave a lecture on "Industrial Hand Injuries" at the Latrobe Valley Hospital, Yallourn.

On April 12, 1958, at the Gippsland Base Hospital, Sale, a clinical session on gynecological problems was presented by Dr. J. W. Johnstone and Dr. Barry Kneale. Following this a lecture was given by Dr. Johnstone on "Hormones in Gynecology", and Dr. Barry Kneale lectured on "Carcinoma of the Body of the Uterus". Later in the evening a quiz session on obstetrics and gynecology was conducted by a panel consisting of Dr. Johnstone, Dr. Kneale and Dr. Terence Michael.

On July 12, 1958, a meeting was held at the Latrobe Valley Community Hospital, Yallourn. After presentation of clinical cases of mitral valve disease, Dr. J. Gardiner lectured on "Medical Aspects of Mitral Valve Disease", and Mr. K. N. Morris lectured on "Surgical Aspects of Mitral Valve Disease". In the evening a quiz session was conducted by a panel consisting of Dr. Gardiner, Mr. Morris and Dr. T. Steel.

During the year, area meetings of the subdivision were held at Morwell, Bairnsdale and Warragul to discuss the proposals of the Labour Party for a National Health Service. Dr. C. H. Dickson attended the Warragul meeting.

JOHN E. JOSEPH,
Honorary Secretary.

Ballarat.—Office bearers: Branch Council representative, Dr. Mervyn Robinson; substitute representatives, Dr. N. F. Pescott and Dr. F. P. McArdle; Chairman, Dr. J. S. T. Stevens; Vice-Chairman, Dr. W. L. Sloss; Honorary Treasurer, Dr. F. P. McArdle; Honorary Secretary, Dr. N. F. Pescott.

The annual meeting, in the form of a dinner at Craig's Hotel, was held on October 3, 1957. The office bearers were elected and then Major-General Sir Kingsley Norris gave an inspiring address on the development of the British Empire under the title of "Turnips and Herrings".

Four post-graduate lectures were held at intervals during the year and delivered by Mr. B. K. Rank ("Surgery of Hand Reconstruction"), Dr. David Thomas ("Medical Hazards of Industry"), Dr. Austin Doyle ("Hypertension"), Dr. Vernon Collins ("Pediatrics").

A general meeting of the subdivision was held on November 21, 1957, when the following subjects were discussed: uniform fees in the subdivision, the Pensioner Medical Service in relation to the Ballarat Base Hospital, and Labour Party policy re nationalization of medicine.

Two other general meetings were held in the homes of Dr. J. S. T. Stevens and Dr. Mervyn Robinson concerning the possibility of the nationalization of medicine. The latter meeting was addressed by the Medical Secretary, Dr. Cyril Dickson. The subdivision was unanimous that such a policy, if implemented, would be disastrous to medical practice.

Five subdivisional Council meetings were held during the year, when problems of local and general importance were resolved.

NEIL F. PESCOTT,
Honorary Secretary.

Goulburn.—Office bearers: Branch Council representative, Dr. D. F. Lally; substitute representatives, Dr. F. V. Harder and Dr. A. E. Dickmann; Chairman, Dr. J. B. McMillen; Honorary Secretary, Dr. Brian Schloeffel; Honorary Treasurer, Dr. Mark Roche.

Two lecture series were held under the auspices of the Melbourne Medical Post-Graduate Committee—both highly successful in the professional and social aspects, each being followed by a buffet dinner at which informal discussion took place. We have found to be of great help the notification of our activities in the news columns of the local Press and a request to the general public that they limit their calls for attention to urgent matters only. Our wishes have been well accepted and lectures are now conducted with almost no interruptions (as opposed to frequent entrances and exits in the past). Our public relations are furthered on each occasion by a large printed notice board at the entrance of the Base Hospital stating the occasion and the names of lecturers and their subjects (suitably adjusted as necessary for lay purposes). We have found this to be well appreciated and to enhance professional prestige in this district. The lecture series were:

November 23, 1957: Mr. E. E. Dunlop, "Vascular Disease"; Dr. Alan Stoller, "Neuroses in General Practice".

March 15, 1958: Dr. John Stubbs, "The Control of Chronic Dyspepsia"; Professor Maurice Ewing, "Management of a Lump in the Breast".

April 10, 1958: Dr. Fitzpatrick, of the Mental Hygiene Department, spoke on the work and aims of Alcoholics Anonymous. He brought with him two members who gave their life story and the amazing part Alcoholics Anonymous had played in their rehabilitation. The simple sincerity of this meeting deeply impressed all present in a way not experienced before.

The attendance was 30-35 on each occasion.

The Victorian Branch of The Royal Australasian College of Physicians held a meeting at the Mooroopna Base Hospital on September 13, 1958. Some 50 members of the College and subdivisions in Victoria and New South Wales were present. An evening session was held at the New Victoria Hotel in Shepparton.

Activities in the near future:

October 25, 1958: A combined gathering of the members of the Goulburn Valley Law Association and the members of the Goulburn Subdivision at the New Victoria Hotel, Shepparton. Purpose: "For the furtherance of friendly relationship and the betterment of understanding between the members of our two ancient professions."

November 22, 1958: Dr. Ian Stahle and Dr. John Game in a post-graduate lecture series.

It is hoped that a meeting of the Royal Australasian College of Surgeons will be arranged in the new year.

Several film demonstrations were also held during the year, arranged by the Tutor Sister and various drug houses.

BRIAN SCHLOEFFEL,
Honorary Secretary.

South Western.—Office bearers: Branch Council representative, Dr. W. R. Angus; substitute representatives, Dr. B. S. Alderson and Dr. L. T. Griffiths; Chairman, Dr. B. D. Vaughan; Vice-Chairmen, Dr. J. K. Gardner and Dr. A. D. Matheson; Honorary Secretary, Dr. R. R. Sobey; Committee, Dr. S. C. Fitzpatrick, Dr. H. C. Maling, Dr. R. A. MacDougall, Dr. W. M. Davies and Dr. W. R. Angus.

Four meetings have been held at various centres. These have taken the form, as previously, of a combination of clinical meeting, business meeting, and have usually concluded with a dinner.

Lecturers for the clinical meetings have been arranged by the Melbourne Medical Post-Graduate Committee, and the members of the subdivision appreciate the work done by the Committee and by the lecturers in providing what is nowadays an "essential service" to practitioners.

On the business side there was considerable discussion at several meetings on the various aspects of the National Health Service, and wholehearted approval was expressed at the efforts of the Branch and Federal Councils to maintain and improve a service which will be satisfactory to both the patient and the profession.

In addition to the subdivisional meetings, a Branch meeting was held at Colac in May. This was greatly appreciated from both the medical and social point of view, and members are grateful to the Branch Council for the arrangements made.

R. R. SOBEY,
Honorary Secretary.

North Western.—Office bearers: Branch Council representative, Dr. B. Hutton-Jones; substitute representatives, Dr. A. Hinchley and Dr. Ross Webster; Chairman, Dr. G. Forayth; Honorary Secretary, Dr. Ross Webster.

On March 22, 1958, a business meeting was held at Horsham, when all office bearers were reelected for a further twelve months. The main object of the meeting was to hear an address by Dr. George Swinburne, who spoke on the future of the National Health Service in Australia. All members present showed a keen interest in, and appreciation of, the activities of the Branch Council in this regard.

A combined scientific and social meeting of the subdivision was conducted at Horsham on Saturday, July 19. In the afternoon scientific session, lectures were given by the President of the Branch, Dr. Keith Hallam, who spoke on "X-Ray Diagnosis", and by Dr. Leonard Travers, whose subject was "Anaesthesia in General Practice". Following a cocktail party, members and their wives were entertained at dinner at which the guest of honour was Dr. Leslie Hurley, whose most entertaining after-dinner speech was entitled "Fashions in Medicine". This was a most successful occasion, as evidenced by a number exceeding sixty at the dinner. All members were very grateful to the visiting lecturers who contributed so much to this success.

The usual post-graduate meetings have been held this year, at Warracknabeal in March, Mildura in September, and Horsham in October. All have been well attended, and once again our thanks are recorded to the Melbourne Medical Post-Graduate Committee for arranging the lectures.

ROSS WEBSTER,
Honorary Secretary.

Reports of Sections.

Section of Industrial Medicine.—Office bearers: President, Dr. L. Weddick; Honorary Secretary, Dr. W. F. Cooper; Honorary Treasurer, Mr. Ferguson Laidlaw; Committee, Dr. A. Christophers, Dr. D. Donald, Dr. J. Gowland, Dr. A. Keech and Dr. R. Wilson.

A meeting of the section was held on May 20 at Repco Universal Proprietary Limited in the form of a plant walk and with guest speaker Dr. Ian Stahle discussing "Oil Acne Dermatitis". A demonstration by the Industrial Hygiene Division of the State Public Health Department was also given at this meeting.

A combined meeting was held with the Industrial and Insurance Nurses Section of the Royal Victorian College of Nursing on "The Role of the Industrial Nursing Sister". The speakers were Mr. Douglas Donald, Sister E. Oxer and Sister R. Benton.

A symposium by members of the section on "Medical Aspects of Safety" will be given at the 1958 National Safety Convention, to be held in Melbourne.

In December a meeting of the section will be held in association with the Melbourne Medical Post-Graduate Committee with visiting guest speaker, Dr. A. Austin Egger, C.B.E., whose subject will be "Aspects of the Slough Industrial Health Service".

The annual Edgar Rouse prize was conducted for entrants in Medicine, Division III. The title of the essay was "Discuss the Value of the Occupational History in Clinical Case Finding".

Facilities were arranged for plant visits for students from the clinical schools of the teaching hospitals.

W. F. COOPER,
Honorary Secretary.

Section for the Study of Allergic Diseases.—Office bearers: Chairman, Dr. P. Ward Farmer; Immediate Past Chairman, Dr. Gerald Doyle; Secretary-Treasurer, Dr. Alan Murray; Executive Members, Dr. V. G. Bristow and Dr. R. H. O. Donald.

Our membership totals twenty-three. Four section meetings were held and the average attendance was fourteen.

The November meeting in 1957 was held in conjunction with the Melbourne Medical Post-Graduate Committee in the Medical Society Hall, when a symposium on asthma took place. Dr. D. A. Prentice opened the discussion, after talks by Dr. P. Ward Farmer on "Causes and Diagnosis", Dr. R. H. O. Donald on "Aspects Relating to the Upper Respiratory Tract" and Dr. V. G. Bristow on "Treatment".

Dr. T. a'B. Travers opened a discussion on "Allergy in the Eye" in February, 1958.

In May, 1958, Dr. Bryan Gandevia read a paper and showed slides on the subject "Ventilatory Capacity in the Management of Asthmatic States".

At the August meeting Dr. E. W. Chenoweth read a paper entitled "Eczematous Type Contact Dermatitis".

We were pleased to welcome visitors at all our meetings and to have them participate in our various discussions.

ALAN MURRAY,
Honorary Secretary.

Section of Radiology.—Office bearers: President, Dr. A. E. Piper; Honorary Secretary, Dr. D. Lloyd Dick.

Meetings of the section were held throughout the year on the fourth Tuesday of each month.

Negotiations concerning terms and conditions of employment of radiologists in non-teaching hospitals were continued with the Hospitals and Charities Commission through the British Medical Association. Further discussions were conducted with the B.M.A. Council on the principle of the public hospital X-ray department entering into competition with private radiologists.

D. LLOYD DICK,
Honorary Secretary.

Ophthalmological Society of Australia, Victorian Section.—Office bearers: President, Dr. E. D. O'Brien; Honorary Treasurer, Dr. P. H. Cowen; Honorary Secretary, Dr. S. Troski.

A number of meetings has been held during the year. Dr. K. Lidgett gave an illustrated talk on "The Principles and Technique Involved in the Radiodiagnosis of Uveal Melanomata".

Dr. W. Gillis spoke about his experiences abroad, in particular on the organization and function of special ophthalmic clinics.

Dr. Hugh Greer gave a lecture on basal cell carcinomas.

The establishment of schools for partially sighted children was discussed at a meeting attended by Dr. B. P. McCloskey, Director of Child Health. Recommendations on visual standards and selection of the children have been forwarded to the Health Department.

It has been proposed that an Asia-Pacific Academy of Ophthalmology be established. Members of the Association have welcomed this.

Other matters that have been discussed were:

1. The establishment of a chair of ophthalmology.
2. Implementation of school and industrial sight screening and demonstrations of equipment for this purpose.
3. Methods of encouraging post-graduate students from the Pacific area to receive training in Melbourne.

S. TROSKI,
Honorary Secretary.

Australian Oto-laryngological Society (Victorian Division).—Office bearers: President, Dr. Jean Littlejohn; Committee-man, Dr. Heyworth Watson; Honorary Treasurer, Dr. R. C. Willis; Honorary Secretary, Dr. D. F. Cossar.

The section records with regret the sudden deaths during the year of its President, Dr. John H. Shaw, and his successor, Dr. T. G. Millar.

The annual meeting of the Society was held in Hobart at the time of the B.M.A. Congress, and several clinical meetings were arranged by the section at various hospitals throughout the year and were well attended.

D. F. COSSAR,
Honorary Secretary.

Section of Preventive Medicine.—Office bearers: Chairman, Dr. G. S. Anderson; Honorary Secretary, Dr. D. W. Rankin; Committee, Dr. R. J. Farnbach, Dr. A. Ferris, Dr. P. Gilbert.

The annual general meeting of the section for 1957 was held on November 14.

Meetings have been held throughout the year, the speakers and their subjects being:

November 14, 1957: Dr. H. A. S. van den Brenck, "Some Disease States Caused by Ionizing Radiation"; Dr. D. W. Rankin, "Comment on the Incidence of Leukæmia over the Last 10 Years".

March 13, 1958: Dr. Howard Williams, "The Prevention and Treatment of Poisoning in Children".

May 8, 1958: Dr. Alan Stoller, "The Problem of Alcoholism".

July 10, 1958: Dr. E. V. Keogh, "Asian Influenza".

September 11, 1958: Dr. Eric Mackay, "The Prevention of Maternal Mortality".

D. W. RANKIN,
Honorary Secretary.

On behalf of the Branch Council,

KEITH HALLAM,
President.

K. E. RATTEN,
Honorary Secretary.

C. H. DICKSON,
Medical Secretary.

This report would not be complete without reference to the invaluable assistance rendered by Dr. Dickson to the Branch throughout the year. He has been most helpful to me personally and it has always been a pleasure to discuss matters with him. Our thanks go also to Miss Corley and the staff for the willing way in which they carry on what is a steadily increasing volume of business and do it with a smile.

KEITH H. HALLAM,
President.

Addendum.

The following reports are published on behalf of the Melbourne Medical Post-Graduate Committee.

The Melbourne Medical Post-Graduate Committee is charged with the responsibility of providing facilities for post-graduate study in all branches of medicine. The Committee comprises representatives of the Faculty of Medicine, the British Medical Association, the teaching hospitals and other bodies interested in post-graduate training. This year representatives from the College of Radiologists and the College of Pathologists were elected to the Committee for the first time.

During this year the desirability of a closer link between the University of Melbourne and this Committee has been under consideration. In most of the States of Australia the Post-Graduate Committees are committees of the governing bodies of the appropriate university. Discussions are at present being held with the University of Melbourne, and it is hoped that a satisfactory agreement can be reached.

Courses Suitable for Candidates for Post-Graduate Qualifications.—Courses in the basic sciences were arranged in conjunction with the appropriate departments in the University of Melbourne.

The honorary medical staff of Prince Henry's Hospital, at the request of the Post-Graduate Committee, arranged an eight weeks course in general medicine. This course coincided with the visit to Prince Henry's Hospital of Dr. Malcolm Milne of London. Dr. Milne's lectures and demonstrations constituted an important part of the course, which was an outstanding success. The Post-Graduate Committee congratulates the hospital on its initiative in inviting to Melbourne this distinguished visitor.

The honorary medical staff of the Royal Melbourne Hospital conducted a course in general surgery suitable for candidates for Part II M.S. and the final Fellowship examination. This course was held at the request of the Post-Graduate Committee.

Later in the year a further course in general surgery was held at the teaching hospitals by the Royal Australasian College of Surgeons.

A new series of lectures on the "Scientific Basis of Medicine" was held this year, the subject being cardiopulmonary physiology.

These lectures were well attended and the Post-Graduate Committee is indebted to the lecturers for their valuable contributions of current research work.

Another new course was the course in forensic medicine arranged by Dr. Keith Bowden at the City Morgue. This essentially practical course of instruction, held over a period of two weeks, was greatly appreciated by doctors attending.

The Post-Graduate Committee provided administrative assistance for courses in psychiatry, ophthalmology and otolaryngology arranged by the Australian Association of Psychiatrists, the Victorian Section of the Ophthalmological Society of Australia and the Victorian Division of the Australian Oto-laryngological Society respectively.

Refresher Courses.—A refresher course in medicine and surgery was held over a period of one week in April-May at Alfred and St. Vincent's Hospitals. This course was well attended and it is hoped to arrange two such courses next year.

Refresher courses in obstetrics and gynecology were held in February and August, each over a period of two weeks.

In place of the usual paediatric refresher course, the Royal Children's Hospital held a post-graduate week in September which was attended by school medical officers and a large number of other doctors.

Overseas Lecturers.—The following overseas visitors gave lectures for the Committee: Professor F. A. R. Stammers of Birmingham, Professor M. L. Rosenheim of London, Professor Charles Illingworth of Glasgow, Professor G. H. Gaddum of Edinburgh, Professor M. M. Wintrobe of Salt Lake City, U.S.A., Dr. M. D. Milne of London, Dr. Paul White of Boston, U.S.A. In addition the Committee has arranged for lectures later this year by Dr. Alice Stewart of Oxford, Dr. A. Austin Eagger of Slough, Dr. Marjory Warren of London.

Recorded Lectures.—Through the generosity of Nicholas Proprietary Limited the Committee has continued to record lectures given by overseas visitors. These recordings on microgroove disks are available to groups of doctors or individuals, preference being given to doctors in country districts. Most of these lectures are illustrated by slides.

The following lectures were recorded: "Reactions to Drug Therapy", by Professor M. L. Rosenheim; "Chronic Pyelonephritis", by Professor M. L. Rosenheim; "The Epidemiology of Heart Disease", by Dr. Paul White; "Metabolic Diseases of Bone", by Dr. M. D. Milne; "The Anemias—Their Pathogenesis and Management", by Professor M. Wintrobe; "Treatment of Leukemia and Lymph Node Disorders", by Professor M. Wintrobe; "Blood Disorders Caused by Drug Sensitivity", by Professor M. Wintrobe; "Carcinoma of the Stomach", by Professor F. A. R. Stammers; "Pain in the Distribution of the Brachial Plexus", by Professor F. A. R. Stammers; "Peripheral Arterial Disease", by Professor F. A. R. Stammers; "Complications of Partial Gastrectomy—Immediate and Delayed", by Professor F. A. R. Stammers; "Diagnosis and Management of the Jaundiced Patient", by Professor C. Illingworth.

Country Courses.—Twenty-three country courses were arranged for 1958. In addition to giving lectures, the visitors have formed a panel for a quiz session, which appears to be appreciated by the doctors attending the courses.

General.—The Committee has continued to arrange for the overseas training of doctors proceeding to the United Kingdom and the United States of America. Individual courses of instruction and clinical work in teaching hospitals were also arranged for a number of graduates. The following figures indicate the number of doctors who have availed themselves of the facilities offered by the Committee in 1958:

Total number of enrolments for courses and clinics	519
Numbers attending courses for higher qualifications	129
Numbers attending country courses (on reports received)	158
Numbers attending metropolitan refresher courses	126
Number of individual doctors who have attended courses by overseas lecturers (roll taken at one series only)	110
Number of doctors for whom the Committee has arranged training overseas	22

Finance.—The work of the Post-Graduate Committee has been carried on for a number of years at a financial loss. The loss this year has been considerably heavier than usual and has caused the Committee anxiety.

During the year a letter was sent to all doctors in Victoria who were not then annual subscribers, seeking their support. At present there are approximately 600 annual subscribers.

The Committee is seeking further financial support from the State Government, but urges all doctors to support its activities.

The Committee thank the lecturers who took part in their courses during the year. They also express thanks to the deans and members of the clinical schools of the teaching hospitals and the members of the departments of the University of Melbourne for their assistance in carrying out the programme in 1958. The Committee also acknowledges the financial assistance which Nicholas Proprietary Limited continue to give in the recording of lectures.

British Medical Agency of Victoria Proprietary Limited.

During the year the number of practices changing hands was no greater than usual. It was very noticeable that some medical practitioners in the metropolitan area who had planned to retire were reluctant to do so when a buyer for their practice was presented, and a number of practices has been withdrawn from sale.

There was no increase in the demand for partners. In fact, more younger doctors than in previous years were seeking solo practice.

Country practices were no less difficult to sell and those sold offered most generous terms to buyers.

The position in regard to locum tenentes fluctuated during the year—for the months of January and February there were many more vacancies than there were locums to fill them, yet in May and June some locums were unemployed. It was interesting to note that the demand for locums in the usually busy "flu months" was the lowest since the war.

Since the beginning of the year the Agency has been given the management of several additional buildings, and approximately £50,000 per year of rents is now collected.

There has been a very strong drift of specialists from Collins Street to East Melbourne and St. Kilda Road, the more attractive car parking facilities for both doctors and patients being partly responsible for this.

The British Medical Insurance Company of Victoria Limited.

The annual report of the company was submitted over the signature of the Chairman (the late Sir Victor Hurley) at the ordinary general meeting on August 11, 1958. The following is a summary of the report.

The directors have pleasure in submitting for your approval the balance sheet, profit and loss account and appropriation account for the twelve months ended April 30, 1958.

The results of the year's operations (as disclosed in the profit and loss account) have not in the opinion of the directors, been materially affected by any items of an abnormal character. The total premiums written for the year were £120,522, as compared with £105,994 last year. Net profit for the year was £13,030 7s., after providing £5700 for taxation. The appropriation account shows that £1221 was allocated during the year to various institutions connected with the medical profession.

Up to date the company has given books to the value of £3065 and £14,609 in cash to the Medical Society of Victoria, and more than £4,518 to various sub-branches of the British Medical Association and other institutions connected with the medical profession. It has also taken up debentures of the Medical Society to the value of £2500, upon which it is accepting interest at the rate of only 1% *per annum*, which of course saves the Medical Society a considerable sum in interest.

The Company has made the following loans to the Medical Society of Victoria: £3150 to finance a building purchase; £3000 to finance the purchase of an estate agency; £10,000 to finance the purchase of property at 15-17 Lansdowne Street, East Melbourne.

The directors feel that members of the British Medical Association will be interested to know of the benefits they have received through the activities of

the Company, and feel sure that the knowledge will strengthen the already solid support given by the profession.

PRESENTATION OF GOLF TROPHIES.

The President announced that the golf cups could not be presented as there had been a tie for both the Gerald Weigall Championship Cup and the David Roseby Handicap Cup, and that the spoons had been won by Dr. A. D. Wilson and Dr. Austin Ley.

INSTALLATION OF THE PRESIDENT FOR THE ENSUING YEAR.

The chair was vacated by Dr. Keith H. Hallam, who installed Dr. J. Gavin Johnson as President for the ensuing year. Dr. Johnson thanked the members for his election.

PRESIDENT'S ADDRESS.

Dr. Keith H. Hallam then delivered the retiring President's address (see page 217).

APPOINTMENT OF AUDITORS.

Messrs. J. V. M. Wood and Company were appointed auditors for the ensuing twelve months.

Post-Graduate Work.

CLINICAL MEETINGS AT ST. VINCENT'S HOSPITAL, SYDNEY.

The gastro-enterological unit of St. Vincent's Hospital, Sydney, will conduct a series of clinical meetings, to be held usually on the last Thursday of each month at 5.30 p.m. The programme is as follows:

February 26: 9.30 a.m., clinical discussion, Professor A. S. Johnstone, Professor of Radiodiagnosis, Leeds University.
March 19: 5.30 p.m., "Gall-Bladder Disease", Dr. J. O'Neill.
April 30: 5.30 p.m., "Some Physiological and Biochemical Aspects of the Gastro-Intestinal Tract", Dr. A. Freedman.

DISEASES NOTIFIED IN EACH STATE AND TERRITORY OF AUSTRALIA FOR THE WEEK ENDED JANUARY 10, 1959.¹

Disease	New South Wales	Victoria	Queensland	South Australia	Western Australia	Tasmania	Northern Territory	Australian Capital Territory	Australia
Acute Rheumatism	2(1)	6(5)	1(1)	..	..	..	..	..	9
Amoebiasis
Ancylostomiasis
Anthrax
Bilharziasis
Brucellosis
Cholera
Chorea (St. Vitus)	..	1(1)	..	..	..	..	..	..	1
Dengue
Diarrhoea (Infantile)	4(3)	7(4)	8(7)	1	1	..	2	2	25
Diphtheria	1(1)	..	..	..	1
Dysentery (Bacillary)	1(1)	2(2)	5(2)	..	..	..	8
Encephalitis	1(1)	1(1)	..	..	..	..	..	..	2
Filariasis
Homologous Serum Jaundice
Hydatid	..	1	..	..	..	2	..	..	3
Infective Hepatitis	81(28)	50(30)	6(1)	42(19)	4(3)	..	..	..	185
Lead Poisoning	1	..	..	..	..	..	1
Leprosy	1	..	1
Leptospirosis
Malaria
Meningococcal Infection	..	2(1)	1	..	..	..	..	..	3
Ophthalmia
Ornithosis
Paratyphoid
Plague
Poliomyelitis	..	6(6)	..	..	..	..	..	..	6
Puerperal Fever
Rubella	..	33(41)	..	5(2)	30(29)	..	2	1	91
Salmonella Infection	2(2)	3(3)	..	..	..	5
Scarlet Fever	8(7)	18(11)	2(1)	1(1)	2(1)	1	..	..	32
Smallpox
Tetanus	..	1(1)	..	..	..	..	..	..	1
Trachoma	1	..	8	..	9
Trichinosis
Tuberculosis	21(13)	23(20)	14(5)	6(4)	..	4(1)	..	..	69
Typhoid Fever	..	1(1)	..	..	..	..	..	..	1
Typhus (Flea, Mite and Tick-borne)
Typhus (Louse-borne)
Yellow Fever

¹ Figures in parentheses are those for the metropolitan area.

May 21: 5.30 p.m., "Diverticulitis", Dr. Peter Cahill, Dr. T. Naah, Dr. J. Fleming, Dr. J. Garvan. June 25: 5.30 p.m., "Gastric Secretion", Dr. D. Piper. August 27: 5.30 p.m., "Hemochromatosis", Dr. R. J. Walsh, Dr. W. Hennessy. October 29: 5.30 p.m., clinical demonstrations, hospital registrars. November 26: 5.30 p.m., "Problems in the Approach to Surgery of Ulcerative Colitis", Dr. V. J. Kinsella.

The Royal Australasian College of Physicians.

EXAMINATION FOR MEMBERSHIP.

INTENDING CANDIDATES for the examination for membership of The Royal Australasian College of Physicians, to be held in April-May, 1959, are reminded that applications for this examination close on Friday, March 13, 1959. The written examination will take place in capital cities where candidates are offering on Friday, April 10, 1959. The clinical examination will take place in Adelaide on or about Wednesday, May 20, 1959. Only those candidates whose answers in the written examination have attained a satisfactory standard will be asked by the Censor-in-Chief to proceed to the clinical examination. Application forms may be obtained from the Honorary Secretary, 145 Macquarie Street, Sydney.

Notice.

THE CHILDREN'S MEDICAL RESEARCH FOUNDATION OF N.S.W.

THE following is a list of donations to the Children's Medical Research Foundation of New South Wales received from members of the medical profession in the period January 28 to February 3, 1959:

Dr. N. Waddy (second donation), Dr. Felix Arden: £10 10s.

Previously acknowledged: £7887 1s. 9d. Total received to date: £7908 1s. 9d.

Nominations and Elections.

THE undermentioned have applied for election as members of the Victorian Branch of the British Medical Association:

Basser, Philip Nathan, M.B., B.S., 1952 (Univ. Sydney), 179 East Boundary Road, East Bentleigh.

Owen, Earl Ronald, M.B., B.S., 1958 (Univ. Sydney), Alfred Hospital, Prahran.

The undermentioned have been elected as members of the New South Wales Branch of the British Medical Association: Fink, Norbert Frederick Raoul (provisional registration), M.B., B.S., 1959 (Univ. Sydney); Herriott, Bruce Arthur (provisional registration), M.B., B.S., 1959 (Univ. Sydney); Murray, John Cameron (provisional registration), M.B., B.S., 1959 (Univ. Sydney); Pokorny-Zsigmond, Akos (provisional registration), M.B., B.S., 1959 (Univ. Sydney); Schliff, Peter (provisional registration), M.B., B.S., 1959 (Univ. Sydney); Warren, Bruce Albert (provisional registration), M.B., B.S., 1959 (Univ. Sydney); Beal, Robert William, M.B., B.S., 1958 (Univ. Sydney); Bookallil, Michael John, M.B., B.S., 1958 (Univ. Sydney); Cronin, Anthony Earl, M.B., B.S., 1956 (Univ. Sydney); Muggridge, William Alexander, M.B., B.S., 1956 (Univ. Sydney); Roebuck, David John, M.B., B.S., 1956 (Univ. Sydney); Kovacic, Hinko Slavko, M.D., 1937 (Univ. Zagreb) (registered in accordance with the provisions of Section 17 (2A) of the Medical Practitioners Act, 1938-1958); Seaborn, Rodney Frederick Marsden, M.R.C.S. (England), L.R.C.P. (London), 1946.

Deaths.

THE following deaths have been announced:

HITTMANN.—Frederick Charles Bruce Hittmann, on January 29, 1959, at Sydney.

COOLICAN.—Michael Raphael Coolican, on February 1, 1959, at Carcoar, New South Wales.

CARDAMATIS.—Constantin John Cardamatis, on February 2, 1959, at Sydney.

McNILL.—Angus McNell, on February 3, 1959, at Sydney.

Diary for the Month.

- FEB. 16.—Victorian Branch, B.M.A.: Finance Subcommittee.
- FEB. 17.—New South Wales Branch, B.M.A.: Medical Politics Committee.
- FEB. 18.—Victorian Branch, B.M.A.: Branch Meeting.
- FEB. 19.—Victorian Branch, B.M.A.: Executive of Branch Council.
- FEB. 24.—New South Wales Branch, B.M.A.: Hospitals Committee.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Medical Secretary, 135 Macquarie Street, Sydney): All contract practice appointments in New South Wales. Anti-Tuberculosis Association of New South Wales. The Maitland Hospital.

South Australian Branch (Honorary Secretary, 80 Brougham Place, North Adelaide): All contract practice appointments in South Australia.

Editorial Notices.

ALL articles submitted for publication in this Journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations, other than those normally used by the Journal, and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given: surname of author, initials of author, year, full title of article, name of journal, volume, number of first page of the article. The abbreviations used for the titles of journals are those of the list known as "World Medical Periodicals" (published by the World Medical Association). If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors submitting illustrations are asked, if possible, to provide the originals (not photographic copies) of line drawings, graphs and diagrams, and prints from the original negatives of photomicrographs. Authors who are not accustomed to preparing drawings or photographic prints for reproduction are invited to seek the advice of the Editor.

Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary is stated.

All communications should be addressed to the Editor, THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales. (Telephones: MW 2651-2-3.)

Members and subscribers are requested to notify the Manager, THE MEDICAL JOURNAL OF AUSTRALIA, Seamer Street, Glebe, New South Wales, without delay, of any irregularity in the delivery of this Journal. The management cannot accept any responsibility or recognize any claim arising out of non-receipt of journals unless such notification is received within one month.

SUBSCRIPTION RATES.—Medical students and others not receiving THE MEDICAL JOURNAL OF AUSTRALIA in virtue of membership of the Branches of the British Medical Association in Australia can become subscribers to the Journal by applying to the Manager or through the usual agents and booksellers. Subscriptions can commence at the beginning of any quarter and are renewable on December 31. The rate is £5 per annum within Australia and the British Commonwealth of Nations, and £6 10s. per annum within America and foreign countries, payable in advance.